Naval Submarine Medical Research Laboratory
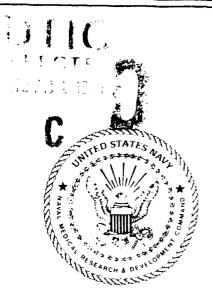
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A COMPUTER ASSISTED PROGRAM FOR THE
MANAGEMENT OF ACUTE DENTAL PAIN:

PROGRAMMER'S MANUAL

by

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A COMPUTER ASSISTED PROGRAM FOR THE MANAGEMENT OF ACUTE DENTAL PAIN PROGRAMMER'S MANUAL

by

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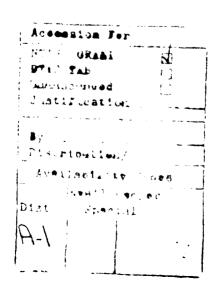## NAVAL SUBMARINE MEDICAL RESEARCH LABORATORY
NSMRL Report 1156
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Summary Page

THE PROBLEM

To provide a programmer's manual for the Dental Emergencies Diagnostic System (DENTAL).

THE FINDINGS

The manual lists and describes all programs, data, and text files.

APPLICATION

The information presented in this manual will allow programmers to understand and modify DENTAL as necessary to enhance its capabilities or to correct program malfunctions.

Abstract

DENTAL is a medical decision support system for the diagnosis and management of dental emergencies. The user's manual has already been published as NSMRL Report # 1143. This report is written to function as the programmer's manual for DENTAL. The report lists and describes the purpose of all programs, data, and text files.

Familiarity with Microsoft QuickBASIC is required to modify DENTAL or to use this manual effectively to identify program malfunctions.

DENTAL Programmer's Manual

Table of Contents

1. Introduction to the DENTAL Programmer's Manual

DENTAL is the Dental Emergencies Diagnostic Module developed for the diagnosis and medical management of dental emergencies by Independent Duty Corpsmen aboard submarines.

The DENTAL User's Manual (NSMRL Report #1143) contains information that is important to the user on how to run the program. The user's manual does not contain programming information. The DENTAL Programmer's Manual contains programming documentation for the Dental Emergencies Diagnostic Module.

1.1 Purpose of the Programmer's Manual

The purpose of this manual is to document the actual program listings to aid any future modifications to DENTAL. This report is a programmer's manual. It contains a brief description of each program and its listing. This manual should be used by a programmer familiar with Microsoft BASICA or QuickBASIC[1]. The manual will not be useful to other readers.

Information on use of the current program may be found in the Dental user's manual, NSMRL Report #1143.

1.2 Background of DENTAL

The Dental Diagnostic Module was originally written in Basic on the Apple computer. As IBM personal computers (PC) were installed on submarines, the program was made MS-DOS compatible and rewritten in BASICA.

Microsoft QuickBASIC has superseded BASICA, so the latest version of DENTAL has been written in Microsoft QuickBASIC 3.0. DENTAL fits on a single 360 kilobyte floppy disk. The program runs on a machine with 512 kilybytes of RAM, though less memory may be required.

2. Description of the program files.

There are two programs that are distributed with the DENTAL system. They are DENTAL.EXE and DIFF.EXE.

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1   Microsoft and MS-DOS are registered trademarks of Microsoft corporation. IBM is a registered trademark of International Business Machines Corporation. Apple is a registered trademark of Apple Computers Inc.

2.1 DENTAL.EXE

This is the main Dental Diagnostic program. This is the only program that the user executes.

2.2 DIFF.EXE

This is the Differential Diagnosis program. It is executed from the main program (DENTAL.EXE).

3. Description of the program utility files.

The following programs are not included in the distributed DENTAL system, but are useful to the programmer.

3.1 DEFBLD.BAS

This program creates the term definition file (DEF.RND) and the term definition index (DEF.IDX) from data statements within the program.

3.2 DISDFBLD.BAS

This program creates the disease definition file (DISDEF.RND) and the disease definition index (DISDEF.IDX) from the file DXDEF.TXT.

3.3 TREATBLD.BAS

This program creates the random access treatment plan file (TRTMTS.RND) from the ASCII file TRTMTS.TXT.

4. Description of definition files.

The following files are the random access files and indexes used by the definition routines.

4.1 DEF.RND

This file contains the term definitions. It is a random access file with 60 characters per record.

4.2 DEF.IDX

This is a sequential ASCII file that contains the index for the term definitions which the dental program loads into the arrays dindx and item$. The format is:

dindx(x,1) - The record number for the beginning of this definition.
dindx(x,2) - The number of records for this definition.
item$(x) - The term to be defined.

4.3 DISDEF.RND

This file contains the disease definitions. It is a random access file with 58 characters per record.

4.4 DISDEF.IDX

This is a sequential ASCII file that contains the index for the disease definitions which the dental program loads into the arrays disindx and disease$. The format is:

disindx(x,1) - The record number for the beginning of this definition.
disindx(x,2) - The number of records for this definition.
disease$(x) - The disease to be defined.

5. Description of the data file DENTAL.DAT

DENTAL.DAT contains the information the user entered and the computer's diagnosis for each case. Every time a case is stored, the information is appended to the end of this file. If the file does not exist, it is created.

This data file is a random access file with a record length of 474 bytes. Each record contains 11 variables. Each variable is listed below along with a brief description, its length, and its starting position in the record.

Variable	Starting Position	Length	Description
ss$	1	9	The patient's social security number.
ag$	10	2	The patient's age.
dt$	12	10	The date converted into a string.
tm$	22	5	The time converted into a string.
r$	27	92	The 92 responses from DENTAL and DIFF converted into a string.
npb$	119	2	The total number of probable diagnoses.
nps$	121	2	The total number of possible diagnoses.
pb$	123	70	The identifying numbers for the probable diagnoses converted into a string.
ps$	193	70	The identifying numbers for the possible diagnoses converted into a string.
cpdx$	263	72	The corpsman's diagnosis converted into a string.
othr$	335	40	The corpsman's response, if he chose "Other".

6. Description of the Treatment Plan files.

The following files contain the treatment plans in different formats.

6.1 TRTMTS.RND

This file is a random access file that contains the treatment plans. The length of each record is 75 bytes. Each treatment plan is terminated by a "|" (ASCII 124).

6.2 TRTMTS.TXT

This file is the ASCII version of the treatment plan file.

7. Description of batch files.

The following batch files are not necessary, but they make compiling, linking, and copying the DENTAL system more convenient.

7.1 DENTLIB.BAT

This is a batch file that creates the user library. It is shown below.

buildlib defrtns.obj dentsubs.obj winsave.obj fprint.obj int86.obj;

7.2 DENTBLD.BAT

This is a batch file that compiles and links the Dental and Diff programs. It is shown below.

> *qb dental/l;*
> *qb diff/l;*
> *link dental;*
> *link diff;*

7.3 COPYDEN.BAT

This is a batch file that copies the files necessary to copy the system to a floppy disk. It is shown below.

```
COPY/V \DENTAL\STEVE2\DENTALQ3\USERLIB.EXE  A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DENTAL.EXE A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DIFF.EXE A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\TRTMTS.RND  A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DEF.IDX  A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DEF.RND  A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DISDEF.IDX  A:*.*
COPY/V \DENTAL\STEVE2\DENTALQ3\DISDEF.RND  A:*.*
COPY/V \QUICK3\BRUN30.EXE A:*.*
```

8. Description of BRUN30.EXE.

BRUN30.EXE is the Microsoft QuickBASIC run-time module. It must be present in order to run the DENTAL and DIFF programs.

9. Description of BRUN30.LIB.

This is the Microsoft QuickBASIC run-time module library. It must be present in order to link the Dental and Diff programs.

10. Description of USERLIB.EXE.

USERLIB.EXE is a library of subroutines that the Dental and Diff programs use. The modules that are combined to create the user library are:

10.1 DEFRTNS.BAS

This module contains the definition and window routines.

10.2 DENTSUBS.BAS

This module contains the subroutines for DENTAL and DIFF.

10.3 WINSAVE.ASM

This is the assembly language routine to save the text behind a window.

10.4 FPRINT.ASM

This is the assembly language routine to print text fast.

10.5 INT86.OBJ

This is a QuickBASIC supplied assembly-language subroutine that provides software interrupt support for system service calls.

11. Procedure to compile and link.

DENTAL.BAS, DIFF.BAS, DEFRTNS.BAS and DENTSUBS.BAS are compiled using the QuickBASIC 3.0 compiler. Use the /L option for DENTAL.BAS and DIFF.BAS (it allows them to access the user library). The assembly language subroutines WINSAVE.ASM and FPRINT.ASM are compiled using the microsoft MACRO assembler Version 1.27, MASM.EXE, but should also compile with any later version without difficulty. LINK.EXE, the Microsoft linker, is used to link the object modules DENTAL.OBJ and DIFF.OBJ. The library file, BRUN30.LIB must be present on the disk in order to link the DENTAL and DIFF object modules.

The batch file DENTBLD.BAT, is used to compile and link the DENTAL and DIFF programs.

NOTE: *If any of the programs that are combined to create the user library are modified, it must be rebuilt and the DENTAL and DIFF programs must be recompiled.*

12. Procedure to change the Term Definition files.

Load the program DEFBLD.BAS into the QuickBASIC environment. Edit the definitions in the data statements located at the bottom of the program. Press CTRL-R to run the program and create new DEF.RND and DEF.IDX files.

13. Procedure to change the Disease Definition files.

Edit the ASCII file of disease definitions (DXDEF.TXT). Load the program DIS-DFBLD.BAS into the QuickBASIC environment and press CTRL-R to run it. .. will create new DISDEF.RND and DISDEF.IDX files.

14. Procedure to change the treatment files

Edit the ASCII file TRTMTS.TXT. Load the program TREATBLD.BAS into the QuickBASIC environment and press CTRL-R to run it. It will create a new TRTMTS.RND file. Check the record numbers that appear on the screen against the data statements in the dental program. If any of the record numbers have changed, the data statement must also be changed and the DENTAL program recompiled.

15. Procedure to build the user library.

After any modifications are made to DEFRTNS.BAS, DENTSUBS.BAS, WINSAVE.ASM and FPRINT.ASM recompile them, then execute DENTLIB.BAT to rebuild the user library.

Acknowledgements

Disclaimer

Appendix A

List of Variables Used in Programs

ANSI	*The response to a question passed from getresp.*
ANSI	*The response to a question passed from trtresp to seetrtmts.*
ATTRIB	*The screen attribute used by SCROLLUP.*
BEGC	*Used by BOX, the column where the box begins.*
BEGR	*Used by BOX, the row where the box begins.*
C	*Corresponds with RESPONSE(57) .*
CI	*Corresponds with RESPONSE(10) .*
CORPRESP(36)	*When the corpsman is asked to diagnose the patient, the cells in CORPRESP that correspond with the diseases he picks are set to 1.*
D1	*Corresponds with RESPONSE(3) .*
D2	*Corresponds with RESPONSE(4) .*
D3	*Corresponds with RESPONSE(5) .*
DGLIMT	*The maximum number of characters to print on a line.*
DGPOS(35,2)	*Line numbers to keep track of the line the diagnosis is displayed on are stored in this array.*
DINDX(120,2)	*This is the index for the Term Definitions.*
DISEASE$(34)	*The diseases used by the disease definition routines are stored in this array.*
DISINDX(34,2)	*This is the index for the Disease Definitions.*
DU	*Corresponds with RESPONSE(7).*
DX$(35)	*This array contains the 35 diseases.*
E1	*Corresponds with RESPONSE(14).*

E2	*Corresponds with RESPONSE(15).*
E3	*Corresponds with RESPONSE(17).*
E4	*Corresponds with RESPONSE(18).*
E5	*Corresponds with RESPONSE(19).*
E6	*Corresponds with RESPONSE(16).*
E7	*Corresponds with RESPONSE(20).*
E8	*Corresponds with RESPONSE(21).*
E9	*Corresponds with RESPONSE(22).*
EA	*Corresponds with RESPONSE(53).*
EB	*Corresponds with RESPONSE(23).*
EC	*Corresponds with RESPONSE(24).*
EE	*Corresponds with RESPONSE(25).*
EG	*Corresponds with RESPONSE(26).*
EH	*Corresponds with RESPONSE(28).*
EI	*Corresponds with RESPONSE(27).*
ENDC	*Used by BOX, the column where the box ends.*
ENDR	*Used by BOX, the row where the box ends.*
F1	*Corresponds with RESPONSE(67).*
FIRSTDG	*The number of the first diagnosis to print on a page in seetrtmts.*
FL	*Corresponds with RESPONSE(77).*
HR	*Corresponds with RESPONSE(8).*
ITEM$(120)	*This array contains the terms used by the term definition routines.*
LASTDG	*The number of the last diagnosis to print on a page in seetrtmts.*

LONGEST	*The number of characters in the longest option.*
MAIN	*This is a constant used to compare with responses.*
MB	*Corresponds with RESPONSE(86).*
MMENU	*This is used to save the response from the main menu.*
MON$	*MON$ is equal to "c" if the monitor is color and m" if the monitor is monochrome.*
MP	*Corresponds with RESPONSE(87).*
MR	*Corresponds with RESPONSE(85).*
MW	*Corresponds with RESPONSE(84).*
MY	*Corresponds with RESPONSE(88).*
NF	*Corresponds with RESPONSE(54).*
NM	*This is the total number of diagnoses in the program.*
NUMDG(n)	*NUMDG(1) is a counter for the total number of probable diagnoses. NUMDG(2) is a counter for the total number of possible diagnoses.*
NUMOPS	*This is the number of options for a given question.*
OPLINE(10)	*The line numbers for the first line of each option to a given question are stored in this array.*
OPTION$(10,2)	*Array to store the options to a given question.*
OW	*Corresponds with RESPONSE(50).*
P1	*Corresponds with RESPONSE(29).*
P2	*Corresponds with RESPONSE(31).*
P3	*Corresponds with RESPONSE(32).*
P4	*Corresponds with RESPONSE(33).*
P5	*Corresponds with RESPONSE(34).*

P6	*Corresponds with RESPONSE(36).*
P7	*Corresponds with RESPONSE(37).*
P8	*Corresponds with RESPONSE(38).*
P9	*Corresponds with RESPONSE(39).*
PAGE	*This keeps track of the page number.*
PAUSE!	*This variable is a counter for the pause between questions.*
PB	*Corresponds with RESPONSE(11).*
PC	*Corresponds with RESPONSE(12).*
PCOL	*This variable keeps track of which side of the screen the diagnoses are listed.*
PE	*Corresponds with RESPONSE(13).*
PG	*Corresponds with RESPONSE(40).*
PH	*Corresponds with RESPONSE(42).*
PN	*Corresponds with RESPONSE(9).*
POSSCOL	*Column number to display possible diagnoses.*
POSSPTR	*Column number to display pointer for possible diagnoses.*
PROBCOL	*Column number to display probable diagnoses.*
PROBPTR	*Column number to display pointer for probable diagnoses.*
PV	*Corresponds with RESPONSE(41).*
PZ	*Corresponds with RESPONSE(58).*
QCOL	*Column number to display question.*
QROW	*Row number to display question.*
QUES$	*Variable to store the question.*
REALCASE	*Flag for real case (simulated case = 0; real case = 1).*

RESPONSE(92)	*Array to store the all the responses to the questions in DENTAL and DIFF.*
SA	*Corresponds with RESPONSE(80).*
SB	*Corresponds with RESPONSE(81).*
SC	*Corresponds with RESPONSE(83).*
SCROLLINES	*The number of lines to scroll, used by SCROLLUP.*
SH	*Corresponds with RESPONSE(89).*
SI	*Corresponds with RESPONSE(90).*
SJ	*Corresponds with RESPONSE(91).*
SK	*Corresponds with RESPONSE(92).*
SOFTMENU	*The response from the Soft Tissue Lesions Menu is stored in this variable.*
SW	*Corresponds with RESPONSE(35).*
SZ	*Corresponds with RESPONSE(82).*
T0	*Corresponds with RESPONSE(69).*
TA	*Corresponds with RESPONSE(55).*
TB	*Corresponds with RESPONSE(56).*
TC	*Corresponds with RESPONSE(60).*
TDLINE(35)	*This array is used in SEETRTMTS. It keeps track of the line numbers where the diseases are displayed.*
TG	*Corresponds with RESPONSE(61).*
TH	*Corresponds with RESPONSE(66).*
TI	*Corresponds with RESPONSE(62).*
TJ	*Corresponds with RESPONSE(63).*
TK	*Corresponds with RESPONSE(64).*

TL	*Corresponds with RESPONSE(65).*
TM	*Corresponds with RESPONSE(6).*
TN	*Corresponds with RESPONSE(68).*
TP	*Corresponds with RESPONSE(70).*
TPTRCOL	*Column number to display pointer in SEETRTMTS.*
TR	*Corresponds with RESPONSE(71).*
TREATIDX(35)	*This is the index for the first record number of each treatment plan.*
TREATROW	*This contains the row to print the treatment information on.*
TS	*Corresponds with RESPONSE(72).*
TT	*Corresponds with RESPONSE(73).*
TU	*Corresponds with RESPONSE(74).*
TV	*Corresponds with RESPONSE(76).*
TW	*Corresponds with RESPONSE(75).*
TY	*Corresponds with RESPONSE(78).*
TZ	*Corresponds with RESPONSE(79).*
UZ	*Corresponds with RESPONSE(30).*
WHEREFROM$	*If WHEREFROM$="Diff" then control is being transferred from the DIFF program.*
X	*Corresponds with RESPONSE(2).*
X1	*Corresponds with RESPONSE(43).*
X2	*Corresponds with RESPONSE(44).*
X3	*Corresponds with RESPONSE(45).*
X4	*Corresponds with RESPONSE(46).*
X5	*Corresponds with RESPONSE(47).*

X6	*Corresponds with RESPONSE(48).*
X7	*Corresponds with RESPONSE(49).*
X8	*Corresponds with RESPONSE(51).*
X9	*Corresponds with RESPONSE(52).*
XX	*Corresponds with RESPONSE(1).*
Z(35)	*Each cell in this array corresponds with a certain diagnosis. If Z(x)=1 then this is a probable diagnosis, if Z(x)=2 then this is a possible diagnosis.*
ZY	*Corresponds with RESPONSE(59).*

DENTAL.BAS

> *REM This is the main program. It was modified last on 4/3/89 by Cindy Burgess-Russotti.*

DEFINT A-Z

> *REM Dimension arrays for DENTAL and DIFF programs.*

```
DIM Z(35)
DIM DX$(35)
dim response(92)
dim option$(10, 2), opline(10)
dim dgpos(35, 2), treatnum(35, 2), numdg(2), treatidx(35)
dim tdline(35), corpresp(36)
```

> *REM Dimension arrays for window routines.*

```
DIM WINDscratt(5), WINDframatt(5), WINDheader$(5)
DIM WINDrow(5), WINDcol(5), WINDheight(5), WINDwidth(5)
DIM wind%(2000, 5)
DIM WINDrowptr(5), WINDcolptr(5)          'UL corner of frame
```

> *REM Dimension arrays for definition routines*

```
DIM item$(120), dindx(120, 2), disease$(34), disindx(34, 2)
```

> *REM Include common statements for all modules.*
> *REM NOTE: The "rem" before the command is part of the command.*

```
REM $include: 'dentcomm.bas'
REM $include: 'windcomm.bas'
```

> *REM Initialize variables for dental.*

```
dglmt=30
dot$=chr$(254)
selectdot$=chr$(8)
probcol=6:posscol=46:pcol=0
probptr=3:possptr=43
ptr$=chr$(16)+chr$(16)
blanks2$="  "
NM=35
begr=1:begc=1:endr=24:endc=80:scrollines=0:attrib=0


ans2=0:page=0:firstdg=0         'these get set in seetrtmts
lastdg=0:tptrcol=0       'and diseasedefinitions


treatrow=0         'set in printtreatments
other$=""         'set in getuserdx


        REM If this is the first time through (mon$="") ask if the display iscolor or monochrome.
        The default is color.


ask:
if (mon$"C") and (mon$"c") and (mon$"M") and(mon$"m")
then
    cls:locate 23, 4:print "Monochrome or Color Display? (M/C)  C"

    locate 23, 40, 1
    mon$=input$(1)
    if mon$=chr$(13) then
      mon$="c"
    end if
end if


        REM If monitor is monochrome, then initialize variables for black, white, and high
        intensity white. Otherwise, initialize variables for color.


if mon$="m" or mon$="M" then
    blink=16:highlight=15:normal=7:bground=0:border=0:quescolor=15
    keyline=7:keylettr=0:ptrcolor=15:respbar=7:resplettr=0
    keyline2=15:keylettr2=0:ssnbox=7
    dotcolor=7:otherscrn=7:otherfram=-112


        REM definition routine colors
```

```
        defkeyline=7:defkeylettr=0:def1f=-112:def1s=7
        def2f=-112:def2s=7:select1f=-112:select2f=-112:select2s=7

elseif mon$="c" or mon$="C" then
        blink=16:highlight=14:normal=7:bground=0:border=0:quescolor=15
        keyline=1:keylettr=7:ptrcolor=12:respbar=7:resplettr=1
        keyline2=3:keylettr2=1:ssnbox=9
        dotcolor=2:otherscrn=112:otherfram=-32
```

   REM definition routine colors

```
        defkeyline=3:defkeylettr=0:def1f=-116:def1s=48
        def2f=-32:def2s=113:select1f=-23:select2f=-116:select2s=48

else
        goto ask
end if

LOCATE , , 0          'turn cursor off
color normal, bground

FOR I=0 TO NM          'read dx and treatment data from data statements
        READ treatidx(i), DX$(I)
NEXT I
```

   *REM If control is being returned to the DENTAL program from diff then skip opening
   files, reading indexes, and printing the instructions.*

```
If wherefrom$="diff" THEN          'from diff
        GOTO mainmenu
end if
```

   REM open random files, read indexes and words (definition routines)

```
open "r", #1, "def.rnd", 60          'for term definitions
open "def.idx" for input as #2
open "r", #3, "disdef.rnd", 60          'for disease definitions
open "disdef.idx" for input as #4
```

   REM read term definitions and index

```
FOR x=1 TO 77
    input #2, dindx(x, 1), dindx(x, 2)
    input #2, item$(x)
NEXT x
close #2
```

REM read disease definitions and index

```
for x=1 to 34
    input #4, disindx(x, 1), disindx(x, 2)
    line input #4, disease$(x)
next x
close #4
```

REM Print the title page.

```
160 cls
color normal, bground
call box(begr, begc, endr, endc)        'draw a box around the screen
color normal, bground
locate 3, 18:print "Naval Submarine Medical Research Laboratory"
locate 4, 30:print "Groton, Connecticut"
LOCATE 6, 24:PRINT "Naval Dental Research Institute"
LOCATE 7, 29:PRINT "Great Lakes, Illinois"
LOCATE 11, 15
color highlight, bground
PRINT "COMPUTER-ASSISTED DIAGNOSIS OF DENTAL EMERGENCIES"
LOCATE 13, 21
PRINT "FOR INDEPENDENT DUTY HOSPITAL CORPSMEN"
color normal, bground
LOCATE 19, 34: PRINT "Version 3.0."
LOCATE 20, 35:PRINT "April 1989"

LOCATE 25, 1: print "Press RETURN to continue.";
X$=input$(1)
```

REM Print the instructions.

```
180 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    'clear the screen except for the box
```

```
color highlight, bground
locate 2, 33:PRINT "Instructions"
color normal, bground
locate 4, 3:PRINT "This computer-assisted program is designed to aid you
in the diagnosis and"
locate 5, 3:PRINT "treatment of common dental emergencies.  As such, it is
only advisory and is"
locate 6, 3:PRINT "not meant to replace your first hand impressions or
judgment. The program is"
locate 7, 3:PRINT "divided into three main sections:"
color highlight, bground
locate 9, 3:PRINT "Diagnosis of Dental Emergencies"
color normal, bground
locate 11, 3:PRINT "Use this section for symptomatic dental emergencies
only. With this section, "
locate 12, 3:PRINT "you must select either ";chr$(34);"not
trauma-related";
     print chr$(34);" or ";chr$(34);"trauma-related";chr$(34);
     PRINT " categories."
color highlight, bground
locate 14, 3:PRINT "Differential Diagnosis of Soft Tissue Lesions"
color normal, bground
locate 16, 3:PRINT "Use this section for a differential diagnosis of soft
tissue lesions."
locate 18, 3:color highlight, bground
PRINT "Other Activities":color normal, bground
locate 20, 3:PRINT "Use this section for definitions of terms and
diseases, to bypass the"
locate 21, 3:PRINT "questions and procede directly to specific treatment
recommendations, or to "
locate 22, 3:PRINT "enter a new patient. When indicated, press Function
key 9 (F9) or 10 (F10)"
locate 23, 3:PRINT "for the Main Menu or Sub-menus, respectively."
LOCATE 25, 1:print "Press RETURN to continue.";
x$=input$(1)


CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
locate 2, 3:PRINT "The program is able to help you only by your accurate
input of information."
locate 3, 3:PRINT "You will be asked to answer a series of questions
concerning the problem at"
locate 4, 3:PRINT "hand. For each question, select one answer that is
most appropriate. Most"
locate 5, 3:PRINT "questions will need to be answered using the following
```

format:"
        locate 7, 3:color highlight, bground
        PRINT   "   Step 1. Use the up and down arrow keys (";chr$(24);"
";chr$(25);") to"
        locate 8, 3:print   "   move the pointer (";
        color ptrcolor, bground:print chr$(16)+chr$(16);
        color highlight, bground:print ") to your choice.":color normal, bground
        locate 8, 3:PRINT
        locate 10, 3:PRINT "then, "
        color highlight, bground
        locate 12, 3:PRINT "   Step 2. Press the Return key."
        color normal, bground
        locate 14, 3:PRINT "Some questions can be answered by just pressing the
Return key. These will"
        locate 15, 3:PRINT "be so indicated when appropriate. The
";chr$(34);"Return";chr$(34);" key, as referred to in this"
        locate 16, 3:PRINT "program, is synonymous with the
";chr$(34);"Enter";chr$(34);" key."
        locate 18, 3:PRINT "Please select the areas of concern from the various
menus carefully! "
        locate 19, 3:PRINT "Read and answer the questions carefully!"
        LOCATE 25, 1:print "Press RETURN to continue.";
        x$=input$(1)

        CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        color highlight, bground
        locate 2, 3:PRINT "Printing The Screen Display"
        color normal, bground
        locate 4, 3:PRINT "If at any time you desire to print the screen display
with your printer, use"
        locate 5, 3:PRINT "the following sequence:"
        color highlight, bground
        locate 7, 8:PRINT "Step 1. Hold the Shift key down, ":color normal,
bground
        locate 9, 3:PRINT "then, "
        color highlight, bground
        locate 11, 8:PRINT "Step 2. Press the Print Screen (PrtSc) key"
        color normal, bground
        locate 13, 3:PRINT "This is valuable for printing definitions or
treatment recommendations."
        locate 15, 3:color highlight, bground:PRINT "Important!":color normal,
bground
        locate 17, 3:PRINT "Please examine the patient carefully. Review the
patient's:"

```
    locate 19, 3:PRINT "        * Chief Complaint
* Allergies"
    locate 21, 3:PRINT "        * Medical and Dental History";
* Medications"
    locate 23, 3:PRINT "        * Signs and Symptoms
* Habits"
    LOCATE 25, 1:print "Press RETURN to continue.";
    x$=input$(1)
```

REM The routine to display each question is as follows:

```
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)    '
Clear the screen except for the border.
    call initoptions        ' Erase options assigned to option$ from previous
question.
    ques$="Question text"        ' Assign question text to ques$.

    option$(1, 1)=" 1. Option one line one"        ' Assign options to option$.
    option$(1, 2)="   Option one line two"
    option$(2, 1)=" 2. Option two line one"
    option$(3, 1)=" 3. Option three line one"
    option$(4, 1)=" 4. Option four line one"

    longest=26        ' Assign length of longest option to longest.
    numops=4          ' Assign number of options to numops.
    qrow=2            ' Row to locate cursor to print question.
    qcol=5            ' Column to locate cursor to print question.

    call priques((ques$))        ' Call subroutine to print the question. Put
parenthesis around ques$, so that it will be passed by value. Priques will
change it, so it shouldn't be passed by reference.

    call prioptions        ' Call subroutine to print options.
    ans=0        ' Set ans (variable used in getresp) to zero.
    call getresp        ' Call subroutine to get response from user. Response is
assigned to ans.

    if ans=67 then        ' Branch to appropriate menu if F9 or F10 keys were
pressed.
        goto mainmenu
    elseif ans=681 then
        goto nottrauma
    elseif ans=682 then
```

goto trauma
end if

old variable name=ans   *' Assign ans to old variable left over from previous versions of the program (this is necessary in order for the computer to make a diagnosis).*

response(3)=old variable name   *' Assign old variable to response array.*

pause!=timer+.5   *' Pause for a little while before clearing the screen and displaying a new question.*

do while TIMER pause!
loop

REM Ask if this case is real or simulated.

```
getsocsec:
    cls
    call box (begr, begc, endr, endc)
    call initoptions
    ques$="This case is:"
    option$(1, 1)=" 1. Real"
    option$(2, 1)=" 2. Simulated"

    longest=13
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if
```

```
if ans=1 then
  realcase=1
else
  realcase=0
end if

pause!=timer+.5
do while TIMER  pause!
loop
```

> *REM if this is a real case then get the patient's social security number and age from the user.*

```
if realcase=1 then            ' real case
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call getssn
end if

pause!=timer+.5
do while TIMER  pause!
loop
```

> *REM Print the main menu. The PRIOPTIONS subroutine isn't used because of the sub-headings for the menu, and the highlighted word in option #1.*

```
mainmenu:

    call box (begr, begc, endr, endc)
    wherefrom$="dental"

    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    locate 25, 1:color keyline, keyline        'print blank instruction line
    print space$(80);
    color normal, bground

850 call initoptions            'initialize option$
    locate 2, 35
    color highlight, bground:PRINT "Main Menu":color normal, bground

    count=1:oprow=4:opcol=17:ptrcol=opcol-5

    locate oprow, ptrcol
    color highlight, bground
```

```
        PRINT "Diagnosis of Dental Emergencies":color normal, bground
        oprow=oprow+2
        locate oprow, ptrcol:color ptrcolor, bground:print ptr$:color normal,
bground
        locate oprow, opcol:PRINT " 1. Discomfort or Pain, ";:color highlight,
bground:print"NOT";:color normal, bground:print " Trauma-related"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, opcol:PRINT " 2. Discomfort or Pain, Trauma-related"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, ptrcol:color highlight, bground:PRINT "Differential
Diagnosis of Soft Tissue Lesions":color normal, bground
        oprow=oprow+2
        locate oprow, opcol:PRINT " 3. A Clinical Change in Oral/Facial Tissues"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, ptrcol:color highlight, bground:PRINT "Other
Activities":color normal, bground
        oprow=oprow+2
        locate oprow, opcol:PRINT " 4. Definitions"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, opcol:PRINT " 5. Treatment Recommendations"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, opcol:PRINT " 6. Enter a New Patient"
        opline(count)=oprow:count=count+1:oprow=oprow+2
        locate oprow, opcol:PRINT " 7. Quit"
        opline(count)=oprow


        REM Assign options to option$ for GETRESP subroutine.


        option$(1, 1)= " 1. Discomfort or Pain, NOT Trauma-related"
        option$(2, 1)= " 2. Discomfort or Pain, Trauma-related"
        option$(3, 1)= " 3. A Clinical Change in Oral/Facial Tissues"
        option$(4, 1)= " 4. Definitions"
        option$(5, 1)= " 5. Treatment Recommendations"
        option$(6, 1)= " 6. Enter a New Patient"
        option$(7, 1)= " 7. Quit"

        GOSUB 32400 'initialize all answer variables to zero

        longest=45
        numops=7
        ans=0

        xx=0
        mmenu=0
```

```
call getresp

pause!=timer+.5
do while TIMER  pause!
loop

XX=ans
response(1)=XX
```

REM *Assign response to mmenu. Mmenu is used to determine what submenu should be displayed when the user presses the "F10" key.*

```
mmenu=ans

CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```

REM *Branch according to response from main menu (before printing instruction line).*

```
IF XX= 4 THEN
goto defmenu
end if
IF XX= 5 THEN
call seetrtmts
goto mainmenu
end if
IF XX= 6 THEN
GOTO getsocsec
end if
IF XX=7 THEN GOTO 15230
```

REM *Print instruction line at bottom of screen.*

```
locate 25, 1:color keyline, keyline:print space$(80);
locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
locate 25, 26::color normal, bground:print " F10 ";:color keylettr,
keyline:print "- Sub-menu";
locate 25, 47::color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
color normal, bground
```

REM Branch according to response from main menu (after printing instruction line).

IF XX= 1 THEN GOTO 1450
IF XX= 2 THEN GOTO 8470
IF XX= 3 THEN GOTO 1880

REM Display definitions submenu and call appropriate definition routine.

```
defmenu:
    call box(begr, begc, endr, endc)
    locate 25, 1:color keyline, keyline:print space$(80);
    locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    count=1:oprow=4:opcol=27:ptrcol=opcol-5
    locate 2, 32:color highlight, bground:PRINT "Definitions Menu":color
normal, bground

    locate oprow, ptrcol:color ptrcolor, bground:print ptr$:color normal,
bground
    locate oprow, opcol:print " 1. Definitions of diseases"
    opline(count)=oprow:count=count+1:oprow=oprow+2
    locate oprow, opcol:print " 2. Definitions of Terms"
    opline(count)=oprow:count=count+1:oprow=oprow+2
    option$(1, 1)= " 1. Definitions of diseases"
    option$(2, 1)= " 2. Definitions of Terms"

    longest=27
    numops=2
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    end if

    pause!=timer+.5
    do while TIMER  pause!
    loop
```

```
dmenu=ans

IF dmenu=1 THEN
cls
call diseasedefinitions
elseif dmenu=2 THEN
cls
call definitionroutine
end if
GOTO defmenu
```

REM Display Dental Emergencies Menu, Not Trauma Related, and get users response

```
nottrauma:

    call box (begr, begc, endr, endc)

1450 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines,attrib)
    call initoptions 'initialize option$ array
    locate 2, 18:color highlight, bground
    PRINT "Dental Emergencies Menu, Not Trauma-related":color normal, bground

    option$(1, 1)= " 1. Tooth, Specific"
    option$(2, 1)= " 2. Teeth, Generalized or Multiple Adjacent"
    option$(3, 1)= " 3. Gingiva, Specific Area"
    option$(4, 1)= " 4. Gingiva, Generalized"
    option$(5, 1)= " 5. Oral Mucosa, Tooth-associated"
    option$(6, 1)= " 6. Other Oral Soft Tissues"
    option$(7, 1)= " 7. Temporomandibular Joint/Muscles"
    option$(8, 1)= " 8. Dental Extraction Site"
    option$(9, 1)= " 9. Tissue Swelling"

    tempresponse=response(1)    'save response(1), response for main menu
before erasing response array
    GOSUB 32400   'initialize answer variables to zero
    response(1)=tempresponse

    longest=40
    numops=9
    qrow=2
    qcol=5
    call prioptions
    ans=0
    call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

x=ans
response(2)=X

pause!=timer+.5
do while TIMER  pause!
loop
```

REM Branch according to user's response from Not Trauma-related Menu

```
IF X=1 THEN  GOTO 5300
IF X=2 THEN  GOTO 3210
IF X=3 THEN  GOTO 5250
IF X=4 THEN  GOTO 5250
IF X=5 THEN  GOTO 5300
IF X=6 THEN  GOTO 1790
IF X=7 THEN  GOTO 7140
IF X=8 THEN  GOTO 1920
IF X=9 THEN  GOTO 5250
```

REM Branch here if Other Oral Soft Tissues (option #6 from Not Trauma-related Menu) was chosen. Refer user to DIFF program.

```
1790 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
     LOCATE 7, 3.PRINT "This program can only diagnose conditions that are associated with the teeth";
     LOCATE 8, 3:PRINT "or gingiva (gums) or otherwise specified on the Main Menu and which have";
     LOCATE 9, 3:PRINT "signs or symptoms consistent with common dental emergency conditions. Please";
     LOCATE 10, 3:PRINT "re-examine the patient and review your findings. Make sure you have not";
     LOCATE 11, 3:PRINT "selected inconsistent answers to questions. You are

```
being returned to the";
    LOCATE 12, 3:PRINT "Main Menu.  The Soft Tissue Lesions Section (No. 3)
can be used to obtain";
    LOCATE 13, 3:PRINT"a differential diagnosis of the condition should this
be unsuccessful.";
    locate 25, 1:print space$(80);
    LOCATE 25, 1: print "Press RETURN to continue.";
    x$=input$(1)

    GOTO mainmenu

        REM Run DIFF program (option #3 from Main Menu).


1880 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

    locate 25, 1:color normal, bground  'clear instruction line
    print  space$(80);
    chain "DIFF"


        REM Dental Extraction site Not Trauma-realted (option #8 from NotTrauma-related
        Menu)


1920 GOSUB 2530    'pain subroutine
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Which of the following most closely approximates when"
    ques$=ques$+" the extraction was performed?"
    option$(1, 1)=" 1. 3 to 5 days ago"
    option$(2, 1)=" 2. 6 days to 4 weeks ago"
    option$(3, 1)=" 3. From 4 to 8 weeks ago"
    option$(4, 1)=" 4. None of the above"

    longest=26
    numops=4
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp
```

```
if ans=67 then
    goto mainmenu
elseif ans=681 then
    goto nottrauma
elseif ans=682 then
    goto trauma
end if

D1=ans
response(3)=D1

pause!=timer+.5
do while TIMER  pause!
loop

CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call initoptions
ques$="Which of the following characterizes the problem associated"
ques$=ques$+" with the extraction site area?"
option$(1, 1)=" 1. A steady pain in the extraction site area.  The patient
may"
option$(1, 2)="   have an earache on the same side."
option$(2, 1)=" 2. A small, well-demarcated area that is tender to touch
and which"
option$(2, 2)="   feels like there is something sharp or jagged under the
tissue"
option$(3, 1)=" 3. A localized diffuse swelling which may be fluctuant or"
option$(3, 2)="   have purulence evident."
option$(4, 1)=" 4. None of the above/other"
longest=68
numops=4
qrow=2
qcol=5
call priques((ques$))

call prioptions
ans=0
call getresp

if ans=67 then
    goto mainmenu
elseif ans=681 then
    goto nottrauma
elseif ans=682 then
```

```
      goto trauma
end if

D2=ans
response(4)=D2

pause!=timer+.5
do while TIMER  pause!
loop

    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

call initoptions
ques$="Was the dental extraction site associated with a lower posterior
tooth?"
option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

D3=ans
response(5)=D3

pause!=timer+.5
do while TIMER  pause!
loop
```

REM Set cell in Z array that corresponds to a certain diagnosis to 1 (probable) or 2
(possible) depending on responses to previous questions.

```
IF (D1=1) AND ((D2=1) OR (PN 1) OR (D3=1)) THEN Z(1)=2
IF (D1=1) AND (D2=1) AND (D3=1) AND (PN 1) THEN Z(1)=1
IF (D2=2) AND ((D1 1) OR (PN 3)) THEN Z(2) =2
IF (D11) AND (D2=2) AND (D14) AND (PN3) THEN Z(2)=1
IF (D2=3) AND ((DU 3) OR (D1 3)) THEN Z(3) =2
IF (D2=3) AND (DU=1) AND (D1 3) THEN Z(3)=1
IF Z(3)=1 OR Z(3)=2 THEN GOTO 3170
GOTO 11810
2430 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="The patient has had a similar problem"
    option$(1, 1)= " 1. Once previously"
    option$(2, 1)= " 2. Off-and-on"
    option$(3, 1)= " 3. Never before"
    longest=21
    numops=3
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if

    TM=ans
    response(6)=TM

    pause!=timer+.5
    do while TIMER  pause!
    loop


2530 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions

    ques$="How long has the immediate problem lasted?"
    option$(1, 1)= " 1. For the last few days"
    option$(2, 1)= " 2. For the last few weeks"
```

```
option$(3, 1)= " 3. Long standing"
longest=27
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

DU=ans
response(7)=DU

pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
GOTO 2740
```

```
2650  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="When present, the pain has lasted"
      option$(1, 1)= " 1. Less than an hour."
      option$(2, 1)= " 2. An hour or longer."
      longest=23
      numops=2
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

HR=ans
response(8)=HR

pause!=timer+.5
do while TIMER  pause!
loop

RETURN

2740  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="The degree of discomfort is"
   option$(1, 1)= " 1. Mild."
   option$(2, 1)= " 2. Moderate."
   option$(3, 1)= " 3. Severe (interferes with sleep or work)."

   longest=44
   numops=3
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if

   PN=ans
   response(9)=PN
```

```
pause!=timer+.5
do while TIMER  pause!
loop


    REM branch here
IF G=1 OR P10 OR X=3 OR X=4 OR X=7 OR X=8 OR X=9 THEN
RETURN
end if


CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call initoptions
ques$= "The pain or discomfort is"
option$(1, 1)= " 1. Continuous."
option$(2, 1)= " 2. Intermittent."

longest=19
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

CI=ans
response(10)=CI

pause!=timer+.5
do while TIMER  pause!
loop

RETURN

    REM branch here
2850 IF X=9 THEN  GOTO 2870
```

```
        CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
2870 call initoptions
        ques$="Is there a history of or evidence in the patient's record of
prior diagnosis"
        ques$=ques$+" or treatment for periodontal disease?"
        option$(1, 1)= " 1. Yes"
        option$(2, 1)= " 2. No"
        longest=8
        numops=2
        qrow=2
        qcol=5
        call priques((ques$))
        call prioptions
        ans=0
        call getresp

        if ans=67 then
          goto mainmenu
        elseif ans=681 then
          goto nottrauma
        elseif ans=682 then
          goto trauma
        end if

        PB=ans
        response(11)=PB

        pause!=timer+.5
        do while TIMER  pause!
        loop

        CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
        ques$="Has the patient had a history of periodontal abscesses?"
        option$(1, 1)= " 1. Yes"
        option$(2, 1)= " 2. No"
        longest=8
        numops=2
        qrow=2
        qcol=5
        call priques((ques$))
        call prioptions
        ans=0
        call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

PC=ans
response(12)=PC

pause!=timer+.5
do while TIMER  pause!
loop
```

3050 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
   call initoptions
   ques$="In the area of concern, is the probing depth (with a periodontal
probe) "
   ques$=ques$+" greater than 4 mm?"

   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   option$(3, 1)= " 3. Unable to determine"
   longest=23
   numops=3
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if

   PE=ans
   response(13)=PE
```

```
pause!=timer+.5
do while TIMER  pause!
loop

        REM branch here
RETURN


3170  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        LOCATE 10, 6: PRINT "Some additional questions need to be asked about
teeth in the area.";
        locate 25, 1:print space$(80);
        locate 25, 2:print "Press RETURN to continue";
        x$=input$(1)
        CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

        REM put key line back


        locate 25, 1:color keyline, keyline:print space$(80);
        locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
        locate 25, 26::color normal, bground:print " F10 ";:color keylettr,
keyline:print "- Sub-menu";
        locate 25, 47::color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
        color normal, bground

            REM Teeth Generalized or Multiple Adjacent Not Trauma-related (Option #2from Not
            Trauma-related Menu)


3210  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        IF (PN=1) OR (PN=2) OR (PN=3) THEN  GOTO 3240
        GOSUB 2740


3240  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
        ques$="Is there significant discomfort when the area is exposed to hot
or cold?"
        option$(1, 1)= " 1. Yes"
        option$(2, 1)= " 2. No"
        option$(3, 1)= " 3. Not at present, but very recently"
        longest=38
        numops=3
        qrow=2
```

```
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
    goto mainmenu
elseif ans=681 then
    goto nottrauma
elseif ans=682 then
    goto trauma
end if

E1=ans
response(14)=E1

pause!=timer+.5
do while TIMER  pause!
loop

        REM branch here
IF (E1=2) THEN  GOTO 3590

3350  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    IF (E1=1) THEN
    ques$="Does the discomfort linger after exposure to hot or cold (as
opposed to"
    elseIF (E1=3) THEN
    ques$="Did the discomfort linger after exposure to hot or cold (as
opposed to"
    end if
    ques$=ques$+" going away immediately after removal of the hot or cold)?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
```

```
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

E2=ans
response(15)=E2

pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
IF (E1=3) THEN  GOTO 3590


3460  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Is exposed dentin present or is the discomfort primarily to cold
or touch"
   ques$=ques$+" and located near the gingival"
   IF (X=2) OR (X=4) THEN
   ques$=ques$+" (gum tissue) margins?"
   else
   ques$=ques$+" (gum tissue) margin?"
   end if
   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp
```

```
    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if

    E6=ans
    response(16)=E6

    pause!=timer+.5
    do while TIMER  pause!
    loop

        REM branch here
    IF X=2 THEN  GOTO 3690

3590  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$= "Is the pain spontaneous (occur for no particular reason)?"
    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if

    E3=ans
    response(17)=E3
```

```
pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
IF (E1=1) THEN  GOSUB 2650

3690  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$= "Do eating sweets or sugar elicit the pain?"
      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      option$(3, 1)= " 3. Not known"

      longest=14
      numops=3
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp

      if ans=67 then
        goto mainmenu
      elseif ans=681 then
        goto nottrauma
      elseif ans=682 then
        goto trauma
      end if

      E4=ans
      response(18)=E4

      pause!=timer+.5
      do while TIMER  pause!
      loop

         REM branch here
      IF X=2 THEN  GOTO 3910

3800  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Do caries (decay) appear associated with the tooth either
```

```
clinically"
    ques$=ques$+" or on an old radiograph?"
    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    option$(3, 1)= " 3. Not known"
    longest=14
    numops=3
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if

    E5=ans
    response(19)=E5

    pause!=timer+.5
    do while TIMER  pause!
    loop

3910  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    IF X=2 THEN
    ques$="Are the teeth sensitive to percussion?"
    else
    ques$="Is the tooth sensitive to percussion"
    end if
    ques$=ques$+" (tapping with a metal instrument or biting)?"

    option$(1, 1)= " 1. Yes"

    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
```

```
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

E7=ans
response(20)=E7

pause!=timer+.5
do while TIMER  pause!
loop
```

4030 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
   call initoptions
   IF (X=2) THEN
   ques$="Is there discomfort when the area near the apices (ends) of the
teeth are"
   else
   ques$= "Is there discomfort when the area near the apex (end) of the
tooth is"
   end if
   ques$=ques$+" palpated?"

   option$(1, 1)= " 1. Yes"

   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

E8=ans
response(21)=E8

pause!=timer+.5
do while TIMER  pause!
loop

CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call initoptions
IF X=9 THEN
ques$= "Is the swelling primarily located near the apical areas (ends)
of adjacent"
ques$=ques$+" teeth or is a fistula present?"
else
ques$="Is a fistula, fluctuant swelling, or localized diffuse
inflammatory swelling"
   IF (X=2) THEN
     ques$=ques$+" present near the apices (ends) of the teeth?"
   else
     ques$=ques$+" present near the apex (end) of the tooth?"

   end if

end if
option$(1, 1)= " 1. Yes"

option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

E9=ans
response(22)=E9

pause!=timer+.5
do while TIMER  pause!
loop

   REM branch here
IF (X=2) THEN  GOTO 4600


4310 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Has the tooth had prior endodontic (root canal) treatment either
started or"
   ques$=ques$+ " completed?"

   option$(1, 1)= " 1. Yes"

   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if
```

```
        EB=ans
        response(23)=EB

        pause!=timer+.5
        do while TIMER  pause!
        loop

            REM branch here
        IF PF=1 THEN  GOTO 4910

4420  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
        ques$="Does a restoration (filling) appear defective in the area of
concern?"

        option$(1, 1)= " 1. Yes"

        option$(2, 1)= " 2. No"
        longest=8
        numops=2
        qrow=2
        qcol=5
        call priques((ques$))
        call prioptions
        ans=0
        call getresp

        if ans=67 then
           goto mainmenu
        elseif ans=681 then
           goto nottrauma
        elseif ans=682 then
           goto trauma
        end if

        EC=ans
        response(24)=EC

        pause!=timer+.5
        do while TIMER  pause!
        loop

4500  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
```

```
ques$="Is there clinical evidence of a fracture line or crack in the
tooth?"

option$(1, 1)= " 1. Yes"

option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

EE=ans
response(25)=EE

pause!=timer+.5
do while TIMER  pause!
loop

   REM branch here
IF EE=1 THEN TW=1
IF Z(3)=1 OR Z(3)=2 THEN GOTO 4860

4600 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Is the problem located in the maxillary posterior teeth?"

option$(1, 1)= " 1. Yes"

option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
```

```
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

EG=ans
response(26)=EG

pause!=timer+.5
do while TIMER  pause!
loop

     REM branch here
IF EG=2 THEN  GOTO 4860

4690  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Does the discomfort increase when the patient bends over
(lowering the"
   ques$=ques$+" position of the head)?"

   option$(1, 1)= " 1. Yes"

   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

EI=ans
response(27)=EI

pause!=timer+.5
do while TIMER  pause!
loop
```

4780 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
call initoptions
ques$="Has the patient recently had a cold or sinus problem?"

option$(1, 1)= " 1. Yes"

option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

EH=ans
response(28)=EH

pause!=timer+.5
do while TIMER  pause!
```

loop

REM Set cell in Z array that corresponds to a certain diagnosis to 1 (probable) or 2 (possible) depending on responses to previous questions.

4860 IF (E9=1) THEN GOSUB 2850
4870 GOSUB 8210
       IF TF=1 THEN GOTO 4910
       IF ZZ=1 THEN GOTO 4910
       IF CI=1 AND PN<>1 AND E7=2 AND E9=2 AND EB=2 AND E8=2 THEN Z(6)=2
       IF (X=2) OR ((EA=1) OR (NF=1)) AND (M <> 1) AND (E9 <> 1) AND (EI <> 1)
AND (E2 <> 1) THEN GOSUB 7900
4910 IF ((P7=1) AND (E2 <> 1)) OR ((E9=1) AND (E2 <> 1) AND ((PE=1) OR (PB=1)
OR (PC=1))) THEN Z(4)=2
       IF (((P7=1) AND (P8=1)) OR (E9=1)) AND ((PE=1) OR (PC=1)) AND (E2 <> 1)
AND ((EC <> 1) OR (E5 <> 1)) AND (EB <> 1) AND (E7=1) THEN Z(4)=1
       IF (E1=1) AND (E2=2) AND (E9=2) AND ((E3=2) OR (NF=1)) THEN Z(5)=2
       IF ((E1=1) AND (E2=2) AND (E3=2) AND (E9=2) AND (HR <> 2)) OR ((NF=1)
AND (E1=1) AND (E7=1) AND (E9=2)) THEN Z(5)=1
       IF (((E1=1) AND (E2=1)) OR ((E3=1) AND (PN=3))) AND (PN <> 1) AND ((EI <>
1) OR (EH <> 1)) THEN Z(6)=2
       IF CI=1 AND HR<>1 AND PN<>1 AND E7=2 AND E8=2 AND EB<>1 THEN Z(6)=2
       IF (((E1=1) AND (E2=1)) OR (E3=1)) AND (PN=3) AND (NF=2) AND (HR=2) AND
(P7 <> 1) AND (P8 <> 1) THEN Z(6)=1
       IF (E9=1) AND ((E7=1) OR (E8=1) OR (PE <> 1) OR (PB <> 1) OR (PC <> 1))
THEN Z(7)=2
       IF (E7=1) AND (E9=1) AND ((EB=1) OR (E2=1) OR (E5=1) OR (EC=1) OR (E8=1)
OR (EA=1)) AND (PE <> 1) AND (PB=2) OR (PC=2) THEN Z(7)=1
       IF (X <> 2) AND ((E7=1) OR (E8=1)) AND ((EI <> 1) OR (EH <> 1)) AND (P7
<> 1) AND (P8 <> 1) AND (E9=2) THEN Z(8)=2
       IF (X=2) AND ((E7=1) OR (E8=1)) AND ((EI <> 1) OR (EH <> 1)) AND (P7 <>
1) AND (P8 <> 1) AND (E9=2) THEN Z(8)=2
       IF (X <> 2) AND (E7=1) AND (E8=1) AND (EE <> 1) AND (EI <> 1) AND (E9=2)
AND (P7 <> 1) AND (P8 <> 1) AND ((E3 <> 1) OR (EH <> 1)) THEN Z(8)=1
       IF (E4=1) OR (E5=1) THEN Z(9)=2
       IF (E5=1) THEN Z(9)=1
       IF (((E1=1) AND (E2=2) AND (E6=1)) OR (E4=1) AND (E9=2)) OR ((X=2) AND
((E4=1) OR (E6=1)) AND (E9=2)) THEN Z(10)=2
       IF (E1=1) AND (E2=2) AND (E3=2) AND ((E6=1) OR (E4=1)) AND (E7=2) AND
(E8=2) AND (E9=2) AND (HR=1) THEN Z(10)=1
       IF ((EH=1) OR (EI=1)) AND (EG=1) AND (E9=2) AND (E2 <> 1) THEN Z(11)=2
       IF (EG=1) AND (EI=1) AND (EH=1) AND (E1 <> 1) AND ((E7=1) OR (E8=1) OR
(NF=1)) AND (E9 <> 1) THEN Z(11)=1
       IF (EC=1) THEN Z(13)=2

IF (EC=1) AND ((E1=1) OR (E6=1)) THEN Z(13)=1

IF ((E9=1) OR ((P7=1) OR (P8=1))) AND ((E2=1) OR (E3=1) OR (EB=1)) AND ((PE=1) OR ((PC=1) OR (PB=1))) THEN Z(12)=2

IF ((E9=1) OR ((P7=1) AND (P8=1))) AND (E2=1) AND (E7=1) AND ((PE=1) AND ((PC=1) OR (PB=1))) THEN Z(12)=1

IF ((E7=1) AND (NF=1)) OR ((EA=1) AND (NF=1)) OR ((NF=1) AND (X9=1)) OR ((EA=1) AND (OW=1)) OR ((OW=1) AND (X9=1)) OR ((EA=1) AND (X8=1) AND (X9=1)) OR ((NF=1) AND (OW=1)) THEN Z(21)=2

IF (((E7=1) AND (NF=1)) OR ((EA=1) AND (OW=1)) OR ((X9=1) AND (OW=1)) OR ((EA=1) AND (X8=1) AND (X9=1)) OR ((NF=1) AND (OW=1) AND (E7=1))) AND (E9 <> 1) AND (EI <> 1) AND (E2 <> 1) THEN Z(21)=1

IF (E1=1) AND (EE=1) AND ((E7=1) OR (EB=1) OR (E9=2) OR (EC=1)) THEN GOTO 11070

IF Z(11)=1 THEN Z(8)=0
IF Z(12)=1 THEN Z(4)=2
IF Z(12)=1 THEN Z(7)=2
IF Z(4)=2 THEN Z(7)=2
IF Z(7)=2 THEN Z(4)=2
IF Z(4)=1 THEN Z(7)=2
IF Z(7)=1 THEN Z(4)=2
IF Z(10)=1 THEN Z(5)=2
GOTO 11810

REM *Gingiva Specific, Gingiva Generalized, and Tissue Swelling, not trauma-related (options 3, 4 and 9 from Not Trauma-related Menu).*

5250 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
IF X=9 THEN GOTO 6010
GOSUB 2430
IF X=4 THEN GOTO 5510

REM Tooth specific and oral mucosa tooth-associated, not trauma-related (options 1 and 5 from Not Trauma-related Menu).

5300 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call initoptions
ques$="Does the area of concern appear to be either a flap of inflamed tissue "
ques$=ques$+" partially covering an erupting tooth or an area of tissue (not always grossly"
ques$=ques$+" inflamed) surrounding an erupting tooth?"

```
option$(1, 1)= " 1. Yes"

option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

P1=ans
response(29)=P1

pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
IF ((X=1) OR (X=5)) AND (P1=2) THEN  GOTO 3210
IF P1=2 THEN  GOTO 5510


5420  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Is the tooth a 3rd molar (wisdom tooth)?"

   option$(1, 1)= " 1. Yes"

   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
```

```
ans=0
call getresp

if ans=67 then
    goto mainmenu
elseif ans=681 then
    goto nottrauma
elseif ans=682 then
    goto trauma
end if

UZ=ans
response(30)=UZ

pause!=timer+.5
do while TIMER  pause!
loop
```

REM branch here
IF ((X=1) OR (X=5)) THEN GOSUB 2430

```
5510  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Aside from possible racial pigmentation, which"
    ques$=ques$+"is a normal finding if present, what is the color of"
    ques$=ques$+" the gingival tissues (gums)?"

    option$(1, 1)= " 1. Pink"

    option$(2, 1)= " 2. Red"

    option$(3, 1)= " 3. Pink with red gingival margins"

    option$(4, 1)= " 4. Either No. 2 or No. 3 above, but with areas having a"

    option$(4, 2)= "   gray-white membranous coating that can be easily
removed"
    longest=54
    numops=4
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
```

```
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

P2=ans
response(31)=P2

pause!=timer+.5
do while TIMER  pause!
loop
```

5650 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
   call initoptions
   IF X=3 THEN
   ques$="In the area of concern, do"
   else
   ques$="Do"
   end if
   ques$=ques$+ " the gingival (gum) tissues bleed when probed or does the
patient"
   ques$=ques$+" report bleeding when brushing?"

   option$(1, 1)= " 1. Yes"

   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
```

```
elseif ans=682 then
  goto trauma
end if


P3=ans
response(32)=P3

pause!=timer+.5
do while TIMER  pause!
loop

    REM branch here
IF UZ=1 THEN  GOTO 6990


5780  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
  call initoptions
  IF X=3 THEN
  ques$="In the area of concern, do"
  else
  ques$="Do"
  end if
5790 ques$=ques$+" the gingival papillae appear"

  option$(1, 1)= " 1. Scalloped and not swollen (normal)?"
  option$(2, 1)= " 2. Swollen and enlarged?"
  option$(3, 1)= " 3. Ulcerated or blunted?"
  longest=41
  numops=3
  qrow=2
  qcol=5
  call priques((ques$))
  call prioptions
  ans=0
  call getresp

  if ans=67 then
    goto mainmenu
  elseif ans=681 then
    goto nottrauma
  elseif ans=682 then
    goto trauma
  end if
```

```
P4=ans
response(33)=P4

pause!=timer+.5
do while TIMER  pause!
loop
```

5910 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
call initoptions
ques$="Is an extremely foul odor present?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"

longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

P5=ans
response(34)=P5

pause!=timer+.5
do while TIMER  pause!
loop

   REM branch here
GOTO 6130
```

6010 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
call initoptions
ques$= "The swelling is located on the"
```

```
option$(1, 1)= " 1. Face."
option$(2, 1)= " 2. Oral mucosa or gingiva, near teeth."
option$(3, 1)= " 3. Other oral tissues, not near teeth."
longest=40
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

SW=ans
response(35)=SW

pause!=timer+.5
do while TIMER  pause!
loop

IF ((SW  1) OR (SW  3)) THEN GOTO 6010

     REM branch here
IF SW=3 THEN GOTO 1790
IF X=9 THEN  GOSUB 2530

6130  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Does the patient have an elevated temperature, palpable lymph
nodes of"
    ques$=ques$+" the head and neck region, or malaise?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
```

```
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

P6=ans
response(36)=P6

pause!=timer+.5
do while TIMER  pause!
loop

   REM branch here
IF (SW=2) THEN  GOTO 6370
IF X=4 THEN  GOTO 6810
IF SW=1 THEN  GOTO 6370

6260  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Is a very prominent, but localized, swelling of the gingival or
mucosal "
   ques$=ques$+" tissues present?"

   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

P7=ans
response(37)=P7

pause!=timer+.5
do while TIMER  pause!
loop

   REM branch here
IF P7=2 THEN GOTO 6500

6370  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Does the swelling have a diffuse inflammatory appearance,  or"
   ques$=ques$+" does the swelling appear to be fluctuant,  or"
   ques$=ques$+" is there evidence of a purulent exudate (pus)?"

   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if
```

```
P8=ans
response(38)=P8

pause!=timer+.5
do while TIMER  pause!
loop

    REM branch here
IF (P7=1) AND (P8=2) THEN GOSUB 2850
IF (P7=1) AND (P8=2) AND (PC=2) AND (PE1) AND (PB=2) THEN GOTO 1790
IF ((SW=2) OR (P7=1)) AND (P8=1) THEN  GOTO 6910

6500  IF X=9 THEN  GOTO 6990

6510  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Do the teeth feel tight or like"
    ques$=ques$+" something is caught between them?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if

    P9=ans
    response(39)=P9

    pause!=timer+.5
    do while TIMER  pause!
    loop
```

```
6610 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
     call initoptions
     ques$="Does the patient relate a history of food being trapped or
caught"
     ques$=ques$+" between the teeth in the area of concern?"

     option$(1, 1)= " 1. Yes"
     option$(2, 1)= " 2. No"
     longest=8
     numops=2
     qrow=2
     qcol=5
     call priques((ques$))
     call prioptions
     ans=0
     call getresp

     if ans=67 then
        goto mainmenu
     elseif ans=681 then
        goto nottrauma
     elseif ans=682 then
        goto trauma
     end if

     PG=ans
     response(40)=PG

     pause!=timer+.5
     do while TIMER  pause!
     loop

        REM branch here
     IF P5=1 THEN  GOTO 6810


6720 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
     call initoptions
     ques$="Does the patient complain of a bad taste or odor in his (or her)
mouth?"

     option$(1, 1)= " 1. Yes"
     option$(2, 1)= " 2. No"
     longest=8
     numops=2
```

```
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

PV=ans
response(41)=PV

pause!=timer+.5
do while TIMER  pause!
loop
```

6810 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
    call initoptions
    ques$="Does the patient have shallow, ragged, painful ulcers covered by
a gray/white"
    ques$=ques$+" membrane and surrounded by a reddish halo?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
```

```
goto trauma
    end if

    PH=ans
    response(42)=PH

    pause!=timer+.5
    do while TIMER  pause!
    loop

        REM branch here
    IF (P7=1) AND (P8=2) THEN GOTO 6920


6910  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
6920  IF X=9 THEN
      CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      locate 10, 6:color highlight, bground:print "Note:";:color normal,
bground
      PRINT "  Some of the following questions refer to teeth in the
immediate"
      locate 11, 6:PRINT "area of the swelling.";
      locate 25, 1:print space$(80);
      locate 25, 2:print "Press RETURN to continue";
      x$=input$(1)
      CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

          REM put key line back


      locate 25, 1:color keyline, keyline:print space$(80);
      locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
      locate 25, 26::color normal, bground:print " F10 ";:color keylettr,
keyline:print "- Sub-menu";
      locate 25, 47::color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
      color normal, bground

end if

    IF ((SW=2) OR (P7=1)) AND (P8=1) THEN  GOSUB 2850
    ZZ=1
    PF=1
    IF SW=2 THEN P7=1
    IF (P7=1) AND (P8=2) AND ((PB=1) OR (PC=1) OR  (PE=1)) THEN GOTO 3170
```

```
        IF (P7=1) AND (P8=2) THEN  GOTO 1790
6990  IF (P1=1) AND (DU <> 3) THEN Z(15)=2
        IF (P1=1) AND (P2 <> 4) AND (DU=1) AND (UZ=1) THEN Z(15)=1
        IF (DU  <> 3) AND ((P2=4) OR (P4=3) OR (P5=1)) AND (P3=1) AND (P7 <> 1)
AND (P8 <> 1) THEN Z(16)=2
        IF (DU=1) AND (P2=4) AND (P3=1) AND (P5=1) AND ((P6=1) OR (P4=3) OR (PN
=3)) AND (P7 <> 1) AND (P8 <> 1) AND (PH <> 1) THEN Z(16)=1
        IF (DU <> 3) AND (P3=1) AND (PH=2) AND (P2 <> 4) AND ((P2 <> 1) OR (P4 <
> 3)) AND (PH =2) AND (P7 <> 1) AND (P8 < > 1) THEN Z(17)=2
        IF (DU <> 3) AND ((PN=2) OR (PN=3)) AND ((P2=2) OR (P2=3)) AND (P3=1)
AND (P4=2) AND (P6=2) AND (PH=2) AND (P7 <> 1) AND (P8 <> 1) THEN Z(17)=1
        IF (X=3) AND ((P9=1) OR (PG=1) OR (PV=1)) AND (P2 <> 4) AND (P8 <> 1)
THEN Z(18)=2
        IF (((P9=1) AND (PG=1)) OR ((P9=1) AND (PV=1)) OR ((PG=1) AND (PV=1)))
AND (X=3) AND (P2 <> 4) AND (P6 <> 1) AND (P8 <> 1) THEN Z(18)=1
        IF ((DU=1) OR (PN <> 1) OR (P6=1)) AND (P1 <> 1) AND (PH=1) THEN Z(14)
=2
        IF (DU=1) AND (PN <> 1) AND (P1 <> 1) AND (P2 <> 4) AND (P6=1) AND (P8
<> 1) AND (PH=1) THEN Z(14) =1
        IF (SW=1) AND ((P6=1) OR (P8=1)) THEN Z(3)=2
        IF (X=9) AND (DU=1) AND ((PN=2) OR (PN=3)) AND (P6=1) AND (P8=1) THEN
Z(3)=1
        IF (P7=1) AND (P8=1) THEN  GOTO 3210
        GOTO 11810
```

REM Temporomandibular joint/muscles (option 7 from Not Trauma-related Menu).

```
7140  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Does the patient have clicking or popping of the
temporomandibular joint?"
      TQ=1

      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      longest=8
      numops=2
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

X1=ans
response(43)=X1

pause!=timer+.5
do while TIMER  pause!
loop
```

7240   CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
call initoptions
ques$="Is the temporomandibular joint tender to palpation either
facially or through"
ques$=ques$+" the external auditory canal?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

X2=ans
response(44)=X2
```

```
pause!=timer+.5
do while TIMER  pause!
loop


7340  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Are the muscles of mastication tender to palpation?"

      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      longest=8
      numops=2
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp

      if ans=67 then
        goto mainmenu
      elseif ans=681 then
        goto nottrauma
      elseif ans=682 then
        goto trauma
      end if

      X3=ans
      response(45)=X3

      pause!=timer+.5
      do while TIMER  pause!
      loop


7430  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Does the patient's mandible deviate laterally on opening?"

      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      longest=8
      numops=2
      qrow=2
      qcol=5
```

```
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

X4=ans
response(46)=X4

pause!=timer+.5
do while TIMER  pause!
loop
```

```
7520  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Is the patient's ability to open his mouth compromised or
limited?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if
```

```
X5=ans
response(47)=X5

pause!=timer+.5
do while TIMER  pause!
loop
```

7610 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
call initoptions
ques$="Does the patient have a history of previous temporomandibular
joint problems"
ques$=ques$+" or treatment?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

X6=ans
response(48)=X6

pause!=timer+.5
do while TIMER  pause!
loop
```

7710 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

```
call initoptions
ques$="Has the patient recently been under increased stress (marital,
job,"
ques$=ques$+" financial, legal, health)?"
```

```
option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

X7=ans
response(49)=X7

pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
TF=1
IF (X1=1) OR (X2=1) THEN Z(20)=2
IF (X1=1) AND (X2=1) THEN Z(20)=1
IF (X3=1) OR (X5=1) OR (X4=1) AND ((X6=1) OR (X7=1)) THEN Z(19)=2
IF (X3=1) AND (X5=1) AND ((X4=1) OR (X6=1) OR (X7=1)) THEN Z(19)=1
GOSUB 7900
IF (OW=1) OR (X8=1) OR(X9=1) THEN  GOTO 4870
GOTO 11810

7900  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Is there evidence of significant"
   IF X=1 THEN
   ques$=ques$+" wear on the occlusal surface"
   else
   ques$=ques$+" wear on the occlusal surfaces"
   end if
```

```
ques$=ques$+" (flat spots, facets)?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

OW=ans
response(50)=OW

pause!=timer+.5
do while TIMER  pause!
loop

8030  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Does the patient either grind or clench his teeth or chew gum
regularly?"

   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp
```

```
    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
goto trauma
    end if

    X8=ans
    response(51)=X8

    pause!=timer+.5
    do while TIMER  pause!
    loop

8110  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    IF (X=1) THEN
    ques$="Is the tooth "+chr$(34)+"sore"+chr$(34)+"?"
    elseIF (X=2) OR (X=7) THEN
    ques$="Are the teeth "+chr$(34)+"sore"+chr$(34)+"?"
    end if

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if

    X9=ans
    response(52)=X9
```

```
        pause!=timer+.5
        do while TIMER  pause!
        loop

            REM branch here
        IF (EA=1) OR (EA=2) OR (NF=1) OR (NF=2) OR (X =2) OR (X=7) THEN RETURN

8210  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
        IF ((X=2) OR (X=7)) and ZZ  1 THEN
        ques$="Do the teeth have increased mobility?"
        else
        ques$="Does the tooth have increased mobility?"
        end if
        option$(1, 1)= " 1. Yes"

        option$(2, 1)= " 2. No"
        longest=8
        numops=2
        qrow=2
        qcol=5
        call priques((ques$))
        call prioptions
        ans=0
        call getresp

        if ans=67 then
           goto mainmenu
        elseif ans=681 then
           goto nottrauma
        elseif ans=682 then
           goto trauma
        end if

        EA=ans
        response(53)=EA

        pause!=timer+.5
        do while TIMER  pause!
        loop

8340  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
        call initoptions
        ques$="Does the patient have a brand new restoration (filling) or dental
```

```
crown/"
    ques$=ques$+"bridgework on or opposing the sore"
    IF (X=2) OR (X=7) THEN
    ques$=ques$+" teeth?"
    else
    ques$=ques$+" tooth?"
    end if
    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if

    NF=ans
    response(54)=NF

    pause!=timer+.5
    do while TIMER  pause!
    loop

    RETURN

        REM Display Dental Emergencies Menu, Trauma-related and get usersresponse.


trauma:
    call box (begr, begc, endr, endc)

8470  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    locate 2, 20:color highlight, bground:PRINT "Dental Emergencies Menu,
Trauma-related";:color normal, bground
```

```
option$(1, 1)= " 1. Tooth or Teeth (Evaluate Individually)"
option$(2, 1)= " 2. Other Oral or Facial Tissues or Structures"
option$(3, 1)= " 3. Both Teeth and Other Oral or Facial Tissues or
Structures"

    LOCATE 16, 5: color highlight, bground:PRINT "Note:";:color normal,
bground
    locate 17, 7:PRINT "Trauma-related means associated with obvious
physical trauma only.";

    tempresponse=response(1)          'save response(1), response for main menu,
before erasing response array.
    GOSUB 32400          'initialize answer variables to zero.
    response(1)=tempresponse

    longest=62
    numops=3
    qrow=2
    qcol=5
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if

    TA=ans
    response(55)=TA

    pause!=timer+.5
    do while TIMER  pause!
    loop

8610  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Ask the patient to open and close while looking in a mirror.
Examine the"
    ques$=ques$+" patient carefully.  Is the occlusion (bite)"
option$(1, 1)= " 1. Unchanged?"
```

```
option$(2, 1)= " 2. Changed slightly?"
option$(3, 1)= " 3. Changed appreciably?"
longest=26
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

TB=ans
response(56)=TB

pause!=timer+.5
do while TIMER  pause!
loop

8740  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
  call initoptions
  ques$="Does the patient have a head injury or did he/she lose
consciousness, vomit, or"
  ques$=ques$+" have a history of amnesia associated with the trauma?"

  option$(1, 1)= " 1. Yes"
  option$(2, 1)= " 2. No"
  longest=8
  numops=2
  qrow=2
  qcol=5
  call priques((ques$))
  call prioptions
  ans=0
  call getresp
```

```
if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

C=ans
response(57)=C

pause!=timer+.5
do while TIMER  pause!
loop
```

REM branch here


```
IF TA=1 THEN  GOTO 9840

8830  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Paresthesia or anesthesia (partial or complete numbness), if
present, is"
   ques$=ques$+" primarily associated with which one of the following:"

   option$(1, 1)= " 1. Lower teeth and/or lower lip and chin."
   option$(2, 1)= " 2. Upper teeth and/or upper lip."
   option$(3, 1)= " 3. Lower eyelid and/or lateral areas of nose and/or
cheek."
   option$(4, 1)= " 4. None of the above/not applicable."
   longest=60
   numops=4
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
```

```
      goto trauma
   end if

   PZ=ans
   response(58)=PZ

   pause!=timer+.5
   do while TIMER  pause!
   loop

8960  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="There is evidence of"

   option$(1, 1)= " 1. Enopthalmia or exopthalmia."
   option$(2, 1)= " 2. Visual disturbances (primarily diplopia)."
   option$(3, 1)= " 3. Subconjunctival hemorrhage (medial or lateral)."
   option$(4, 1)= " 4. Increased intercanthal distance (eyes look/feel
further apart)."
   option$(5, 1)= " 5. Visual asymmetry of the cheek."
   option$(6, 1)= " 6. Pain or crepitus when palpating high into the buccal
vestibule, "
   option$(6, 2)= "   near the 2nd and 3rd molars, with your index
finger."
   option$(7, 1)= " 7. More than one of the above"
   option$(8, 1)= " 8. None of the above"
   longest=67
   numops=8
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if
```

```
ZY=ans
response(59)=ZY

pause!=timer+.5
do while TIMER  pause!
loop
```

9170 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
call initoptions
ques$="Does the mandible deviate to the injured side when opening?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

TC=ans
response(60)=TC

pause!=timer+.5
do while TIMER  pause!
loop
```

9250 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
call initoptions
ques$="Is it painful to open or close?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
```

```
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

TG=ans
response(61)=TG

pause!=timer+.5
do while TIMER  pause!
loop
```

9340 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
call initoptions
ques$="If available, does a current radiograph suggest any fractured
bones?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"

option$(3, 1)= " 3. Not available"
longest=17
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
```

```
      goto nottrauma
  elseif ans=682 then
      goto trauma
  end if

  TI=ans
  response(62)=TI

  pause!=timer+.5
  do while TIMER  pause!
  loop

9450  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
  call initoptions
  ques$="Grasp the mandible with both hands using your thumbs and index
fingers"
  ques$=ques$+" (thumbs on teeth, fingers on skin adjacent to border of
mandible)."
  ques$=ques$+" Without using undue force, gently attempt to move
different segments of"
  ques$=ques$+" the mandible."
  ques$=ques$+" Can bony segments of the mandible be displaced or easily
moved?"

  option$(1, 1)= " 1. Yes"
  option$(2, 1)= " 2. No"
  longest=8
  numops=2
  qrow=2
  qcol=5
  call priques((ques$))
  call prioptions
  ans=0
  call getresp

  if ans=67 then
      goto mainmenu
  elseif ans=681 then
      goto nottrauma
  elseif ans=682 then
      goto trauma
  end if
```

```
      TJ=ans
      response(63)=TJ

      pause!=timer+.5
      do while TIMER  pause!
      loop

9590  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Again, using your thumbs and index fingers (fingers and thumbs
on"
      ques$=ques$+" facial and palatal surfaces of maxillary teeth segments),
attempt"
      ques$=ques$+" to gently displace bony segments of the maxillary arch."

      ques$=ques$+" Can bony segments of the maxilla be displaced or easily
      moved?"
      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      longest=8
      numops=2
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp

      if ans=67 then
        goto mainmenu
      elseif ans=681 then
        goto nottrauma
      elseif ans=682 then
        goto trauma
      end if

      TK=ans
      response(64)=TK

      pause!=timer+.5
      do while TIMER  pause!
      loop
```

```
9720 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
     call initoptions
     ques$="Palpate the facial bones, including the zygomatic arch and
infraorbital rims."

     ques$=ques$+" Is there evidence of a stepping, displacement, or
depression of the facial"
     ques$=ques$+" bones?"

     option$(1, 1)= " 1. Yes"
     option$(2, 1)= " 2. No"
     longest=8
     numops=2
     qrow=2
     qcol=5
     call priques((ques$))
     call prioptions
     ans=0
     call getresp

     if ans=67 then
       goto mainmenu
     elseif ans=681 then
       goto nottrauma
     elseif ans=682 then
       goto trauma
     end if

     TL=ans
     response(65)=TL

     pause!=timer+.5
     do while TIMER  pause!
     loop

9840 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
     call initoptions
     ques$="There is evidence of bleeding"

     option$(1, 1)= " 1. From abrasions or lacerations."
     option$(2, 1)= " 2. Into tissue spaces (ex. Floor of mouth, vestibule,
etc.)"
     option$(3, 1)= " 3. From the gingival margin(s)."
     option$(4, 1)= " 4. #1 And #2"
```

```
option$(5, 1)= " 5. #1 And #3"
option$(6, 1)= " 6. #2 And #3"
option$(7, 1)= " 7. All of the above"
option$(8, 1)= " 8. None of the above"
longest=61
numops=8
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

TH=ans
response(66)=TH

pause!=timer+.5
do while TIMER  pause!
loop

      REM branch here
   IF TA=2 THEN  GOTO 11520


10060  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   ques$="Traumatically involved teeth must be evaluated individually.
The"
   ques$=ques$+" particular tooth in question is"

   option$(1, 1)= " 1. Displaced lingually or facially."
   option$(2, 1)= " 2. Intruded into the socket."
   option$(3, 1)= " 3. Partially extruded from the socket."
   option$(4, 1)= " 4. Totally avulsed "+chr$(34)+"knocked
out"+chr$(34)+"."
   option$(5, 1)= " 5. Not displaced."
   longest=40
```

```
numops=5
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

F1=ans
response(67)=F1

pause!=timer+.5
do while TIMER  pause!
loop

    REM branch here
IF (F1=1) OR (F1=2) OR (F1=5) THEN  GOTO 10520


10230  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Have more than 3 hours elapsed from the time of injury?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
```

```
        goto nottrauma
    elseif ans=682 then
        goto trauma
    end if

    TN=ans
    response(68)=TN

    pause!=timer+.5
    do while TIMER  pause!
    loop

10320 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Is the tooth generally intact (no major fractures, cracks,
chips)?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
        goto mainmenu
    elseif ans=681 then
        goto nottrauma
    elseif ans=682 then
        goto trauma
    end if

    TO=ans
    response(69)=TO

    pause!=timer+.5
    do while TIMER  pause!
    loop

        REM branch here
```

```
    IF (F1=4) THEN  GOTO 10430
    GOTO 10520


10430  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="Does the socket of the avulsed tooth appear intact?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if

    TP=ans
    response(70)=TP

    pause!=timer+.5
    do while TIMER  pause!
    loop

10520  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="As related by the patient and from information in the dental
record, "
    ques$=ques$+" if available, was the tooth otherwise
healthy?"

    option$(1, 1)= " 1. Yes"
    option$(2, 1)= " 2. No"
    longest=8
    numops=2
```

```
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

TR=ans
response(71)=TR

pause!=timer+.5
do while TIMER  pause!
loop
```

10620 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
```
call initoptions
ques$="Has the injured tooth ever had endodontic (root canal)
```
treatment?"

```
option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
```

```
          end if

          TS=ans
          response(72)=TS

          pause!=timer+.5
          do while TIMER  pause!
          loop

              REM branch here
          IF F1=4 THEN GOTO 11520

   10720  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
          call initoptions
          ques$="The tooth in question"

          option$(1, 1)= " 1. Is extremely mobile."
          option$(2, 1)= " 2. Is slightly mobile."
          option$(3, 1)= " 3. Has no increased mobility."
          longest=31
          numops=3
          qrow=2
          qcol=5
          call priques((ques$))
          call prioptions
          ans=0
          call getresp

          if ans=67 then
            goto mainmenu
          elseif ans=681 then
            goto nottrauma
          elseif ans=682 then
            goto trauma
          end if

          TT=ans
          response(73)=TT

          pause!=timer+.5
          do while TIMER  pause!
          loop

              REM branch here
```

```
       IF TT=3 THEN GOTO 10920

10830 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="Do adjacent teeth move when the injured tooth is moved?"

      option$(1, 1)= " 1. Yes"
      option$(2, 1)= " 2. No"
      longest=8
      numops=2
      qrow=2
      qcol=5
      call priques((ques$))
      call prioptions
      ans=0
      call getresp

      if ans=67 then
        goto mainmenu
      elseif ans=681 then
        goto nottrauma
      elseif ans=682 then
        goto trauma
      end if

      TU=ans
      response(74)=TU

      pause!=timer+.5
      do while TIMER  pause!
      loop

10920 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call initoptions
      ques$="There is"

      option$(1, 1)= " 1. Definitely a fracture line, crack, or part of the"

      option$(1, 2)= "   tooth missing."
      option$(2, 1)= " 2. A possible fracture line or crack in the tooth."
      option$(3, 1)= " 3. No evidence of a fracture line or crack in the
tooth."
      longest=58
      numops=3
```

```
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

TW=ans
response(75)=TW

pause!=timer+.5
do while TIMER  pause!
loop

    REM branch nere
IF TW=3 THEN  GOTO 11520


11070  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    IF TW=2 THEN
    ques$="Does the possible fracture line or crack involve the"
    elseIF TW=1 THEN
    ques$="Does the fracture line or crack or the part of the tooth missing
involve the"
    end if
    ques$=ques$+"crown of the tooth?"
11100 option $(1, 1)=" 1. Yes"
    option $(2, 1)- " 2. No"
    longest=8
    numops=2
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    anas=0
    call  getresp
```

```
   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if

   TV=ans
   response(76)=TV

   pause!=timer+.5
   do while TIMER  pause!
   loop

11190  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   call initoptions
   IF TW=2 THEN
   ques$="Does the possible fracture line or crack extend below"
   elseIF TW=1 THEN
   ques$="Does the fracture line, crack, or area where the part is missing
extend below"
   end if
   ques$=ques$+" the gingival (gum) tissues?"

   option$(1, 1)= " 1. Yes"
   option$(2, 1)= " 2. No"
   longest=8
   numops=2
   qrow=2
   qcol=5
   call priques((ques$))
   call prioptions
   ans=0
   call getresp

   if ans=67 then
      goto mainmenu
   elseif ans=681 then
      goto nottrauma
   elseif ans=682 then
      goto trauma
   end if
```

```
FL=ans
response(77)=FL

pause!=timer+.5
do while TIMER  pause!
loop

    REM branch here
IF ((EB=1) OR (TS=1)) THEN GOTO 11430

11310  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call initoptions
    ques$="The pulp (nerve)"

    option$(1, 1)= " 1. Has not been exposed."
    option$(2, 1)= " 2. Has been exposed and is smaller than 1 mm in
diameter."
    option$(3, 1)= " 3. Has been exposed and is larger than 1 mm in
diameter."
    longest=60
    numops=3
    qrow=2
    qcol=5
    call priques((ques$))
    call prioptions
    ans=0
    call getresp

    if ans=67 then
       goto mainmenu
    elseif ans=681 then
       goto nottrauma
    elseif ans=682 then
       goto trauma
    end if

    TY=ans
    response(78)=TY

    pause!=timer+.5
    do while TIMER  pause!
    loop
```

REM branch here
IF (TY=2) OR (TY=3) THEN GOTO 11520

11430 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call initoptions
ques$="Is the dentin exposed?"

option$(1, 1)= " 1. Yes"
option$(2, 1)= " 2. No"
longest=8
numops=2
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if

TZ=ans
response(79)=TZ

pause!=timer+.5
do while TIMER pause!
loop

REM Set Z array, depending on responses to previous questions.

11520 IF (F1=4) AND (TN=2) AND (T0=1) AND (TP=1) AND (TR=1) THEN Z(24)=1
    IF (F1=4) AND ((TN=1) OR (T0=2) OR (TP=2) OR (TR =2)) THEN Z(25)=1
    IF ((F1=1) OR (F1=2) OR (F1=3)) AND (TT<>3) AND (FL<>1) AND (TR=1)
AND (TU<>1) THEN Z(26)=1
    IF ((F1=1) OR (F1=2) OR (F1=3)) AND ((TR=2) OR (FL=1) OR (TT=1) OR (TU
=1)) THEN Z(27)=1
    IF (((F1=2) OR (F1=3) OR (F1=5)) AND ((TW=1) OR (TW=2)) AND (TV=1) AND

(TY=1) AND (TZ=1)) OR ((E1=1) AND (EE=1) AND (TY =1) AND (TZ=1)) THEN Z(28) =1

    IF (((F1=2) OR (F1=3) OR (F1=5)) AND ((TW=1) OR (TW=2)) AND (TV=1) AND
(TY=2) AND (TS<>1)) OR ((E1=1) AND (EE=1) AND (TV=1) AND (TY=2) AND (TS<>
1)) THEN Z(22)=1

    IF (((F1=2) OR (F1=3) OR (F1=5)) AND ((TW=1) OR (TW=2)) AND (TV=1) AND
(TY=3) AND (TS<>1)) OR ((E1=1) AND (EE=1) AND (TV=1) AND (TY=3) AND (TS <>
1)) THEN Z(23)=1

    IF (F1<>4) AND (T0=2) AND (TW<>3) AND (TV=1) AND (FL=2) AND (TY
<>1) THEN Z(29)=1

    IF ((F1=1) OR (F1=2) OR (F1=3) OR (F1=5)) AND ((TT=1) OR (TT=2)) AND
(FL=1) THEN Z(30)=2

    IF ((F1=1) OR (F1=2) OR (F1=3)) AND ((TS=1) OR (FL=1)) AND (TW=1) AND
((TT=1) OR (TT=2)) THEN Z(30)=1

    IF (TU=1) AND (TA<>2) THEN Z(31)=2

    IF (TH<>8) AND (TU=1) AND ((TB=1) OR (TB=2)) AND (TA<>2) AND ((TJ
<>1) AND (TK<>1)) THEN Z(31)=1

    IF (PZ=1) OR (TJ=1) OR (((TB=2) OR (TB=3)) AND ((TC=1) OR (TG=1))) THEN
Z(32)=2

    IF ((TC=1) OR (TG=1) OR (TI=1) OR (TH=2) OR (TH=4) OR (TH=6) OR (TH=7))
AND ((PZ=1) OR (TJ=1) OR (TB=3)) THEN Z(32)=1

    IF ((PZ=2) OR (TK=1)) THEN Z(33)=2

    IF (((TB=2) OR (TB=3)) AND ((TK=1) OR (PZ=2)) AND (((TH=2) OR (TH=4) OR
(TH=6) OR (TH=7)) OR (TI=1))) OR ((PZ=2) AND (TK=1)) THEN Z(33)=1

    IF (C=1) THEN Z(35)=2

    IF (PZ=2) OR (PZ=3) OR ((ZY<>0) AND (ZY<>8)) OR (TL=1) THEN Z(34)=2

    IF ((TL=1) AND (ZY<>8) AND (ZY<>0)) OR ((TL =1) AND (PZ=3)) OR
(ZY=7) OR ((((ZY<>8) AND (ZY<>0)) OR (PZ=3)) AND (TI =1)) THEN Z(34)=1

    IF ((TZ=2) AND (TV=1) AND (TY=1)) OR ((E1=1) AND (EE=1) AND (TY=1) AND
(TZ=2)) THEN Z(29)=1

    IF (Z(32)=1 OR Z(33)=1) AND Z(31)=1 THEN Z(31)=2

    IF (E1=1) AND (EE=1) AND (FL=1) THEN Z(30)=1

    if z(25)=1 or z(25)=2 then z(24)=0

    if z(27)=1 or z(27)=2 then z(26)=0

11810 call getuserdx   *'get corpsman's diagnosis*

    if realcase=1 then   *' save data for real case*
    call wrtdat   *' write responses to file*
    end if

    REM Display Diagnosis

```
11850 cls
        REM Draw a box around the screen and divide it into two columns. One column for prob-
        able diagnoses, and the other for possible diagnoses.


        color dotcolor, bground

        call box (begr, begc, endr-2, endc)
        locate begr, endc/2:print chr$(203);
        locate begr+1, endc/2:print chr$(186);
        locate begr+2, begc:print chr$(204);
        for c=begc+1 to endc-1
        locate begr+2, c:print chr$(205);
        next c
        locate begr+2, endc:print chr$(185);
        locate begr+2, endc/2:print chr$(206);

        for r=begr+3 to endr-3
        locate r, endc/2:print chr$(186);
        next r
        locate endr-2, endc/2:print chr$(202);
        color highlight, bground
        locate begr+1, 11:print "Probable Diagnoses";
        locate begr+1, 51:print "Possible Diagnoses";
        color normal, bground

        REM Display instruction line.


        locate 25, 1:color keyline, keyline:print space$(80);
        locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
        locate 25, 26::color normal, bground:print " F10 ";:color keylettr,
keyline:print "- Sub-menu";
        locate 25, 47::color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
        color normal, bground

        Z(0)=1          'test for no diagnosis
        FOR I=1 TO NM
        IF Z(I) <> 0 THEN
          Z(0)=0
        end if
        NEXT I
```

```
        REM Can't make a diagnosis, print no diagnosis message.
    if z(0) 0 then
    sound 100, 4
    color bground, normal
    for rr=0 to 4
        locate 11+rr, 9:print space$(59);
    next rr
    color resplettr, normal:locate 12, 10:print "Sorry, ";:color bground,
normal
    locate 14, 10:print dx$(0)
    color normal, bground
    locate 23, 5:print "Press RETURN to continue.";

        REM Wait for user to press a key.  Also, check if F9 or F10 keys were pressed.
        call pressret

        REM Branch to appropriate menu if F9 or F10 keys were pressed.
    if ans=67 then
        goto mainmenu
    elseif ans=681 then
        goto nottrauma
    elseif ans=682 then
        goto trauma
    end if

        REM Display treatment recommendation for no diagnosis.


    nodg=1
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call box (begr, begc, endr-1, endc)
    locate 24, 1:print space$(80);
        color highlight, bground:locate 2, 31:print "Recommended Action";:color
normal, bground
        call printtreatmts((nodg)) 'pass by value

        REM Display Instruction line for Treatment Recommendations.


    locate 24, 1:color keyline2, keyline2:print space$(80);
        locate 24, 5:color normal, bground:print " Shift + PrtSc ";:color
keylettr2, keyline2:print "- Print Screen";
        locate 24, 45:color normal, bground:print " Return ";:color keylettr2,
keyline2:print "- To Continue";
        color normal, bground
```

```
call pressret

CALL SCROLLUP (BEGR+1, BEGC+1, ENDR, endc-1, scrollines, attrib)

call box (begr, begc, endr, endc)

if ans=67 then
   goto mainmenu
elseif ans=681 then
   goto nottrauma
elseif ans=682 then
   goto trauma
end if

goto mainmenu

else

      REM Print probable and possible diagnoses
12020   FOR J=1 TO 2
      numdg(j)=0          'counter for number of probable and possible diagnoses
      dgrow=begr+3         'start printing on the third row after the box
      NK=1          'flag to indicate that there are no probable (if j=1) or no
possible (if j=2) diagnoses

      IF J=1 THEN          'decide what column to list diagnoses
        dgcol=probcol
      elseIF J=2 THEN
        dgcol=posscol
      end if
      count=0
      FOR I=0 TO NM  'go through the list of diseases
       IF Z(I)=J THEN 'print this one
        dgrow=dgrow+1
        count=count+1

      REM If you get this far there must be a diagnosis, so set flag to zero.


      NK=0
      dgpos(count, j)=dgrow  'save position of diagnosis on the screen
      numdg(j)=numdg(j)+1  'increment the number of diagnoses
      treatnum(count, j)=i  'keep track of treatment number
```

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```
        color highlight, bground
        a$=dot$+" "+dx$(i)
```

REM Break up diagnosis string if it's too long and print.

```
        while len(a$)dglmt
           b=dglmt+1
           while mid$(a$, b, 1)  " "
           b=b-1
           wend
           locate dgrow, dgcol
           print left$(a$, b);
           a$=" "+right$(a$, len(a$)-b)
           dgrow=dgrow+1
        wend
        locate dgrow, dgcol
        print a$;
        color normal, bground
        end if
     NEXT I

     IF NK=1 THEN
```
REM if j=1 there are no probable diagnoses. If j=2 there are no possiblediagnosis.

```
        locate dgrow+1, dgcol
        color highlight, bground
        print "          NONE          ";
        color normal, bground
        end if
     NEXT J
12350 REM choose treatment plan
```

REM Print instructions at the bottom of the screen.

```
12360   color normal, bground:LOCATE 23, 9: print "For Treatment
Recommendations, position ";
        color ptrcolor, bground:print ptr$;:color normal, bground
        print " then press RETURN.";

        call getresp2        'subroutine for user to select which treatment plan
```

```
if ans=67 then
  cls
  goto mainmenu
elseif ans=681 then
  goto nottrauma
elseif ans=682 then
  goto trauma
end if
```

REM Display treatment recommendations.

```
CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
call box (begr, begc, endr-1, endc)
locate 24, 1:print space$(80);

color highlight, bground:locate 2, 27:PRINT "Treatment
Recommendations";:color normal, bground
    call printtreatmts((treatidx(treatnum(ans, pcol))))    'pass by value
    treatrow=treatrow+1
```

REM Print extra treatment text depending on responses to certain questions.

```
IF X=2 AND CI=1 AND treatnum(ans, pcol)<>11 AND treatnum(ans, pcol)<>21
THEN
    locate treatrow, 4:color highlight, bground:PRINT "Also:";:color
normal, bground
    locate treatrow, 11:PRINT "If you are unable to identify the specific
tooth that may be causing";
    treatrow=treatrow+1
    locate treatrow, 4:PRINT "the problem, look for a tooth with a large
restoration or crown.  Examine";
    treatrow=treatrow+1
    locate treatrow, 4:PRINT "the area again for caries or other etiology
that may have been overlooked.";
    treatrow=treatrow+1
    end if

IF (TH=1) OR (TH=4) OR (TH=5) OR (TH=7) THEN
    if treatnum(ans, pcol)=14 then
        treatrow=treatrow-1
    end if
    color highlight, bground
    locate treatrow, 4:PRINT "Also:";:color normal, bground
```

```
        locate treatrow, 11:print "Update tetanus vaccine as needed. If a
laceration is on the lip, ";
        treatrow=treatrow+1
        locate treatrow, 4:PRINT "align the vermillion border first.  Evert
the edges of the tissue.  Use 5-0";
        treatrow=treatrow+1
        locate treatrow, 4:PRINT "or 6-0 nylon sutures on skin.";

    end if
    IF ((E1=1) OR (E6=1)) AND (EB=1) THEN
        locate treatrow, 4:color highlight, bgrount:print"Also:";:color
normal, bground
        PRINT "  A root canal and sensitivity to hot or cold are
inconsistent.  Check";
        treatrow=treatrow+1
        locate treatrow, 4:PRINT "adjacent teeth.  There may be a partially
completed root canal present.";
    end if
    locate 24, 1:color keyline2, keyline2:print space$(80);
    locate 24, 5:color normal, bground:print " Shift + PrtSc ";:color
keylettr2, keyline2:print "- Print Screen";
    locate 24, 45:color normal, bground:print " Return ";:color keylettr2,
keyline2:print "- To Continue";
    color normal, bground
    call pressret

    if ans=67 then
      goto mainmenu
    elseif ans=681 then
      goto nottrauma
    elseif ans=682 then
      goto trauma
    end if
end if

' go back to print diagnoses
goto 11850

        REM The following data statements contain the data for the TREATIDX andThe DX$
        arrays.


    DATA    1,  A diagnosis cannot be made from the information available.
    DATA    11, Localized Alveolar Osteitis (Dry Socket)
    DATA    20, Osseous Sequestrum
```

```
DATA    30, Abscess/Infection/Cellulitis
DATA    42, Periodontal Abscess
DATA    53, Reversible Pulpitis
DATA    64, Irreversible Pulpitis
DATA    75, Acute Apical Abscess
DATA    87, Acute Apical Periodontitis
DATA    99, Carious Lesion (Decay)
DATA    113, Dentin Hypersensitivity
DATA    124, Maxillary Sinusitis
DATA    136, Endodontic/Periodontic Combined Problem
DATA    148, Defective Restoration
DATA    159, Acute Herpetic Gingivostomatitis
DATA    176, Pericoronitis/Erupting Tooth
DATA    190, Necrotizing Ulcerative Gingivitis
DATA    203, Acute Gingivitis
DATA    213, Food Impaction
DATA    224, Myofascial Pain/Muscle Spasms
DATA    235, Internal Derangement of the Temporomandibular Joint
DATA    247, Occlusal Trauma
DATA    259, "Fractured Crown, Small Pulp Exposure"
DATA    271, "Fractured Crown, Large Pulp Exposure"
DATA    283, "Total Avulsion of Tooth, Good Candidate for Replantation"
DATA    298, "Total Avulsion of Tooth, Poor Candidate for Replantation"
DATA    310, "Displacement/Mobility of Tooth, Favorable Prognosis"
DATA    321, "Displacement/Mobility of Tooth, Guarded Prognosis"
DATA    331, "Fractured Crown, Pulp Not Exposed"
DATA    343, Enamel Fracture
DATA    352, Root Fracture
DATA    363, Fractured Alveolar Bone
DATA    373, Fractured Mandible
DATA    384, Fractured Maxilla
DATA    396, Fractured Facial Bones
DATA    407, Neurologic Injury
```

end

REM Display end page.

15230 CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    locate 5, 10:PRINT "Thank you. If you have any questions concerning
this program, "
    locate 6, 10:PRINT "please contact:"

```
locate 9, 10:PRINT "Commanding Officer"
locate 10, 10:PRINT "Naval Submarine Medical Research Laboratory"
locate 11, 10:PRINT "Naval Submarine Base New London"
locate 12, 10:PRINT "Groton, Connecticut 06349-5900"
locate 14, 10:PRINT "(203) 449-2523 commercial"
locate 15, 10:PRINT "   8-241-2523 autovon"


locate 23, 1, 1          'turn cursor back on
close           'close all open files
END
```

REM *Subroutine to initialize all answer variables.*


```
32400 RESTORE:X=0:XX=0:TA=0:CI=0:G=0:LT=0:UZ=0:RX=0:PL=0:PV=0
    PZ=0:ZY=0:NK=0
    GX=0:D1=0:D2=0:D3=0:TM=0:DU=0:PN =0:PB=0:PC=0:PE=0
    E1=0:E2=0:E3=0:E4=0:E5=0:E6=0:E7=0:E8=0:E9=0:EB=0:EC=0:EE=0
    EI=0:EG=0:EH=0:ZZ=0:EA=0:XX= 0:PQ=0:P1=0:P2=0:P3=0:P4=0:P5=0
    P6=0:P7=0:P8=0:P9=0:PG=0:PH=0:PF=0:TQ=0:X1=0:X2=0:X3=0:X4=0
    X5=0:X6=0:X7=0:X8=0:X9=0:TF=0:OW=0:SA=0:SB=0:SC=0:G=0:SZ=0:MW=0
    MR=0:MB=0:MY=0:MP=0:SH=0:SI=0:SJ=0:SK=0:TB=0:TC=0:TG=0
    TI=0:TJ=0:TK=0:TL=0:TH=0:F1=0:TN=0:T0=0:TP=0:TR=0:TS=0:TT=0:TU=0
    TW=0:TV=0:FL=0:TY=0:TZ=0:C=0:J=0:NF=0:NT=0:LZ=0:domenu=0:GX=0

ERASE response, z

RETURN
```

Subroutine SEETRTMTS
called from: DENTAL *(Main Menu)*
calls: SCROLLUP, BOX, PRINTTREATMTS, PRESSRET
   Display Treatment Recommendations Menu, allow user to select a diagnosis.
then display corresponding treatment plan.

```
sub seetrtmts static
shared DX$(), NM, dot$, begr, begc, endr, endc, scrollines, attrib
shared highlight, tdline(), treatnum(), treatidx(), tptrcol
shared
ans2, page, firstdg, lastdg, keylettr, keyline, keylettr2, keyline2

    tptrcol=7:dgcol=10
    main=67
```

```
dglmt=70
ans2=0

locate begr+1, 24
color quescolor, bground
print "Treatment Recommentations Menu";
color normal, bground
locate 25, 1:color keyline, keyline:print space$(80);
locate 25, 3:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
locate 25, 21:color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
locate 25, 40:color normal, bground:print " PgDn ";:color keylettr,
keyline:print "- Next Page";
locate 25, 58:color normal, bground:print " PgUp ";:color keylettr,
keyline:print "- Previous Page";

page=1

while ans2 <> main  'do until user hits F9 key

  ans2=0
  dgrow=begr+2

  IF page=1 THEN  'dx's 1-18 are on first page
     firstdg=1
     lastdg=18
  elseIF page=2 THEN  'dx's 19-35 are on second page
     firstdg=19
     lastdg=NM
  end if
  count=0

    REM List the diagnoses for this page.

  FOR I =firstdg TO lastdg
     dgrow=dgrow+1
     count=count+1
     tdline(count)=dgrow
     color highlight, bground
     a$=dot$+" "+dx$(i)
     while len(a$)dglmt
```

```
          b=dglmt+1
          while mid$(a$, b, 1) <> " "
              b=b-1
          wend
          locate dgrow, dgcol
          print left$(a$, b);
          a$=" "+right$(a$, len(a$)-b)
          dgrow=dgrow+1
      wend
      locate dgrow, dgcol
      print a$;
      color normal, bground
  NEXT I
  locate 23, 65:print"(Page ";right$(str$(page), 1);" of
2)";
      color normal, bground

      REM choose treatment plan
      call trtresp

      REM print treatment plan
      if ans2>= firstdg and ans2<= lastdg then
          CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

          color highlight, bground:locate 2, 27:PRINT "Treatment
Recommendations";:color normal, bground
          locate 25, 1:color keyline2, keyline2:print space$(80);

          locate 25, 5:color normal, bground:print " Shift + PrtSc ";:color
keylettr2, keyline2:print "- Print Screen";
          locate 25, 37:color normal, bground:print " Return ";:color
keylettr2, keyline2:print "- To Continue";
          locate 25, 61:color normal, bground:print " F7 ";:color keylettr2,
keyline2:print "- Definitions";
          color normal, bground

          call printtreatmts((treatidx(ans2)))          'pass by value

          call pressret
          CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)

          call box(begr, begc, endr, endc)
      end if
```

```
        if ans2 <> main then
        locate 25, 1:color keyline, keyline:print space$(80);
        locate 25, 3:color normal, bground:print " F9 ";:color keylettr,
keyline:print "- Main Menu";
        locate 25, 21:color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
        locate 25, 40:color normal, bground:print " PgDn ";:color keylettr,
keyline:print "- Next Page";
        locate 25, 58:color normal, bground:print " PgUp ";:color keylettr,
keyline:print "- Previous Page";
        end if

        locate begr+1, 24
        color quescolor, bground
        print "Treatment Recommentations Menu";
        color normal, bground
    wend
end sub
```

Subroutine PRINTTREATMTS
called from: DENTAL, SEETRTMTS
This routine opens the treatment recommendations file
(TREATS.RND) *and prints selected treatment plan.*

```
sub printtreatmts (yu) static
shared treatrow

        REM open random file for treatments
        OPEN "R", #5, "trtmts.rnd", 75

        FIELD #5, 75 AS A$
        REM treatment #14
        if yu=162 then
        treatrow=2
        else
        treatrow=3
        end if
        while instr(a$, "|")=0
        GET #5, YU
        yu=yu+1
        treatrow=treatrow+1
        if instr(a$, "|")=0 then
            locate treatrow, 4:PRINT a$;
        end if
```

```
      wend
      CLOSE #5
end sub
```

Subroutine TRTRESP
called from: SEETRTMTS
calls: SCROLLUP
This routine waits for a response to the Treatment
Recommendations Menu. The user can press the up and down arrow
keys to highlight a diagnosis, press return to select it, press
page up and page down to view the two pages of diagnoses, press
F9 to go back to the main menu, or press F7 to see the Term
Definitions.

```
sub trtresp static
shared ans2, page, tdline(), firstdg, lastdg, tptrcol
shared dgcol, begr, begc, endr, endc, scrollines, attrib

   count=1

   locate tdline(count), tptrcol          'put pointer at first probable or possible diagnosis
   color ptrcolor, bground:print ptr$;
   color normal, bground

   numdg=lastdg-firstdg+1

   startpage=page

   while ans2=0 and page=startpage

      DO UNTIL z$=""         ' clear keyboard buffer
      z$=inkey$
      LOOP

      DO          'now get response
      z$=inkey$
      LOOP WHILE z$=""

      if z$=chr$(13) then
      ans2=firstdg+count-1
      elseif len(z$)=2 then
      z$=right$(z$, 1)
      if z$=chr$(72) then '*** up
         REM print blanks where old ptr is
```

```
            locate tdline(count), tptrcol:print blanks2$;
            count=count-1:if count  1 then count=1
            color ptrcolor, bground
            locate tdline(count), tptrcol:print ptr$;
            color normal, bground
        elseif z$=chr$(80) then '*** down
            REM print blanks where old ptr is
            locate tdline(count), tptrcol:print blanks2$;
            count=count+1:if count > numdg then count=numdg
            color ptrcolor, bground
            locate tdline(count), tptrcol:print ptr$;
            color normal, bground
        elseif z$=chr$(67) then '*** F9 main menu
            ans2=67
        elseif z$=chr$(65) then '*** F7 term definitions
            call definitionroutine2
            count=1
        elseif z$=chr$(73) then '*** pgup
            if page=2 then
                CALL SCROLLUP (BEGR+2, BEGC+1, ENDR-2, endc-1, scrollines, attrib)

                page=1
            end if
        elseif z$=chr$(81) then '*** pgdn
            if page=1 then
                CALL SCROLLUP (BEGR+2, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
                page=2
            end if
        end if
        end if
    wend
end sub


Subroutine PRESSRET
called from: DENTAL, SEETRTMTS
This routine is called after displaying "Press RETURN to
continue" on the screen.  Along with the return key, it also
allows the user to press F9 for the Main Menu, F10 for a Sub-
Menu, f7 for the Term Definitions and PgDn to view the next page
of a treatment plan.

sub pressret static
shared page, npages, keyline2, keylettr2
```

```
        ans=0
        while ans=0

            getkey1:          ' clear keyboard buffer
            z$=inkey$
            if z$ <> "" then
            goto getkey1
            end if
            getkey2:
            z$=inkey$
            if z$="" then
            goto getkey2
            end if
            if z$=chr$(13) then
            ans=13
            elseif len(z$)=2 then
            z$=right$(z$, 1)
            if z$=chr$(67) and mmenu <> 5 then   '*** F9 main menu
                ans=67
            elseif z$=chr$(68) and mmenu <> 0  and mmenu <> 5 then   '*** F10 sub menu
                if mmenu=1 then
                    ans=681
                elseif mmenu=2 then
                    ans=682
                end if
            elseif z$=chr$(65)  then   '*** F7 definitions
                call definitionroutine2
            elseif z$=chr$(81) then   '*** PgDn
                ans=81
            end if
            end if
        wend
    end sub
```

Subroutine GETRESP2
called from: DENTAL (*diagnosis section*)
This routine allows the user to choose a treatment plan to view
from the list of probable and possible diagnoses. To select a
diagnosis the user highlights it by pressing one of the direction
keys, then RETURN *to select it. He can also press F9 to go back*
to the Main Menu, F10 to go to a Sub-menu, and F7 to see the Term
Definitions.

```
sub getresp2 static
```

```
shared ans, dgpos(), numdg()
shared ptrcol, ptr$, ptrcolor, blanks2$, respbar, resplettr
shared normal, bground, probptr, possptr, pcol, mmenu

    count=1
    if numdg(1) 0 then
      pcol=1
      ptrcol=probptr
    else
      pcol=2
      ptrcol=possptr
    end if

locate dgpos(count, pcol), ptrcol        'put pointer at first probable or possible diagnosis
color ptrcolor, bground:print ptr$;
color normal, bground


ans=0
while ans=0

    getkey3:        ' clear keyboard buffer
    z$=inkey$
    if z$ <> "" then
    goto getkey3
    end if


    getkey4:        'now get response
    z$=inkey$
    if z$="" then
    goto getkey4
    end if
    if z$=chr$(13) then
    ans=count
    elseif len(z$)=2 then
    z$=right$(z$, 1)
    if z$=chr$(72) then '*** up
      REM print blanks where old ptr is
      locate dgpos(count, pcol), ptrcol:print blanks2$;
      count=count-1:if count < 1 then count=1
      color ptrcolor, bground
      locate dgpos(count, pcol), ptrcol:print ptr$;
      color normal, bground
    elseif z$=chr$(80) then '*** down
      REM print blanks where old ptr is
```

```
        locate dgpos(count, pcol), ptrcol:print blanks2$;
        count=count+1:if count > numdg(pcol) then
count=numdg(pcol)
        color ptrcolor, bground
        locate dgpos(count, pcol), ptrcol:print ptr$;
        color normal, bground
     elseif z$=chr$(75) and numdg(1) <> 0 then '*** left
        locate dgpos(count, pcol), ptrcol:print blanks2$;
        if pcol=2 then
           pcol=1
           count=1
           ptrcol=probptr
        end if
        color ptrcolor, bground
        locate dgpos(count, pcol), ptrcol:print ptr$;
        color normal, bground
     elseif z$=chr$(77) and numdg(2) <> 0 then  '*** right
        locate dgpos(count, pcol), ptrcol:print blanks2$;
        if pcol=1 then
           pcol=2
           count=1
           ptrcol=possptr
        end if
        color ptrcolor, bground
        locate dgpos(count, pcol), ptrcol:print ptr$;
        color normal, bground
     elseif z$=chr$(67) and mmenu <> 0 then  '*** F9 main menu
        ans=67
     elseif z$=chr$(68) and mmenu <> 0 then  '*** F10 sub menu
        if mmenu=1 then
           ans=681
        elseif mmenu=2 then
           ans=682
        end if
     elseif z$=chr$(65) then                '*** definitions
        call definitionroutine2
     end if
     end if
  wend
end sub


Subroutine GETUSERDX
called from: DENTAL
calls: DXRESP, SCROLLUP
```

The purpose of this routine is to get the Corpsman's diagnosis.

```
sub getuserdx static
shared DX$(), NM, dot$, begr, begc, endr, endc, scrollines, attrib
shared highlight, tdline(), dotcolor, ans3, page, firstdg, lastdg
shared keylettr, keyline, selectdot$, tptrcol

    tptrcol=7:dgcol=10
    esc=270
    ans3=0
    erase corpresp

    call SCROLLUP (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
      color quescolor, bground
      locate begr+1, 30
      print "Corpsman's Diagnosis";
      locate begr+3, 22
      print "Select the Most Likely Diagnosis(es)";
      color normal, bground
      locate 25, 1:color keyline, keyline:print space$(80);
      locate 25, 2:color normal, bground:print " Esc ";:color keylettr,
keyline:print "- Exit this Menu";
      locate 25, 24:color normal, bground:print " F7 ";:color keylettr,
keyline:print "- Definitions";
      locate 25, 42:color normal, bground:print " PgDn ";:color keylettr,
keyline:print "- Next Page";
      locate 25, 60:color normal, bground:print " PgUp ";:color keylettr,
keyline:print "- Previous Page";

      page=1

      while ans3 <> esc
        call SCROLLUP (begr+4, begc+1, endr-1, endc-1, scrollines, attrib)

        ans3=0
        dgrow=begr+4

        IF page=1 THEN
          firstdg=1
          lastdg=18
        elseIF page=2 THEN
          firstdg=19
          lastdg=NM+1
        end if
```

```
        count=0
        FOR I =firstdg TO lastdg
           dgrow=dgrow+1
           count=count+1
           tdline(count)=dgrow
           if corpresp(i)=1 then
        dcolor=dotcolor
        whatdot$=selectdot$
           else
        dcolor=highlight
        whatdot$=dot$
           end if
           locate dgrow, dgcol
           color dcolor, bground
           print whatdot$;
           if I=nm+1 then
        print " ";"Other";
           else
        print " "+dx$(i);
           end if
           color normal, bground
        NEXT I
        locate 23, 65:print"(Page ";right$(str$(page), 1);" of
2)";
        color normal, bground

        REM get corpsman's response
        call dxresp
     wend
     color normal, bground
end sub
```

Subroutine DXRESP
called from: GETUSERDX
calls: ENTEROTHER, SCROLLUP
Allow the user to select one or more diagnoses. If he selects
"Other", then call ENTEROTHER.

```
sub dxresp static
shared ans3, page, tdline(), firstdg, lastdg, tptrcol, dot$, dotcolor, NM

shared dgcol, begr, begc, endr, endc, scrollines, attrib, dx$(), highlight
shared selectdot$, other$, otherfram
```

```
esc=270
count=1

locate tdline(count), tptrcol          'put pointer at first probable or possible diagnosis
color ptrcolor, bground:print ptr$;
color normal, bground

numdg=lastdg-firstdg+1
dotcol=tptrcol+3

startpage=page

while ans3<>esc and page=startpage
 DO UNTIL z$=""          ' clear keyboard buffer
  z$=inkey$
 LOOP

 DO          'now get response
  z$=inkey$
 LOOP WHILE z$=""

 if z$=chr$(13) then
  ans3=firstdg+count-1
  if corpresp(firstdg+count-1)=0 then
     corpresp(firstdg+count-1)=1
     locate tdline(count), dotcol
     color dotcolor, bground
     print selectdot$;" ";
     if firstdg+count-1=NM+1 then
        print "Other";
        call enterother
     else
        print dx$(firstdg+count-1);
     end if
  else
     corpresp(firstdg+count-1)=0
     locate tdline(count), dotcol
     color highlight, bground
     print dot$;" ";
     if firstdg+count-1=NM+1 then
        print "Other";
        other$=""
     else
        print dx$(firstdg+count-1);
```

```
        end if
    end if
elseif z$=chr$(27) then '*** Esc
'Check if corpsman selected a dx. If not, ignore Esc key.
    for x=1 to 36
        if corpresp(x)=1 then
            ans3=270
            exit for
        end if
    next x
    if ans3270 then 'corpsman hasn't selected a dx.
        call pushwindow(abs(otherfram), otherfram, "", 15, 18, 3, 43)
        call wlocate (1, 2)
        call fprint("You must select at least one diagnosis.", abs(otherfram))
        beep
        pause!=timer+1
        do while timer  pause!
        loop
        call removewindow
    end if
elseif len(z$)=2 then
  z$=right$(z$, 1)
  if z$=chr$(72) then '*** up
  REM print blanks where old ptr is
        locate tdline(count), tptrcol:print blanks2$;
        count=count-1:if count  1 then count=1
        color ptrcolor, bground
        locate tdline(count), tptrcol:print ptr$;
        color normal, bground
  elseif z$=chr$(80) then '*** down
  REM print blanks where old ptr is
        locate tdline(count), tptrcol:print blanks2$;
        count=count+1:if count  numdg then count=numdg
        color ptrcolor, bground
        locate tdline(count), tptrcol:print ptr$;
        color normal, bground
  elseif z$=chr$(65) then '*** F7 definitions
        call definitionroutine2
        count=1
  elseif z$=chr$(73) then '*** pgup
        if page=2 then
            CALL SCROLLUP (BEGR+4, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
            page=1
        end if
```

```
        elseif z$=chr$(81) then '*** pgdn
            if page=1 then
                CALL SCROLLUP (BEGR+4, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
                page=2
            end if
        end if
    end if
    wend
end sub
```

Subroutine ENTEROTHER
called from: DXRESP
calls: FPRINT, PUSHWINDOW
Display a window on the screen next to "other" and allow the user
to enter up to 40 characters of text.

```
sub enterother static
shared other$, otherscrn, otherfram

call pushwindow(otherscrn, otherfram, "Enter Your
Diagnosis", 21, 30, 3, 46)
other$=""
otherptr=0 'string pointer

LOCATE 22, 33 + otherptr, 1
DO
  DO
    a$=INKEY$
  LOOP WHILE a$=""
    SELECT CASE ASC(LEFT$(a$, 1))
    CASE 32, 48 TO 57, 65 TO 90, 97 to 122        'alphanumerics and blank
      other$=other$ + a$
      otherptr=otherptr + 1
      if otherptr > 40 then
      otherptr=40
      beep
      else
    LOCATE 22, 32 + otherptr
    CALL fprint(a$, otherscrn)
    LOCATE 22, 33 + otherptr, 1
      end if

    CASE 8          'backspace/delete
      otherptr=otherptr - 1
```

```
        IF otherptr < 0 THEN otherptr=0
        LOCATE 22, 33 + otherptr, 1
        CALL fprint(" ", otherscrn)
        other$=LEFT$(other$, otherptr)

      CASE 13          'CR to accept
        call removewindow
      CASE ELSE
        BEEP
      END SELECT
    LOOP UNTIL a$=chr$(13)
    LOCATE , , 0
end sub
```

DIFF.BAS

REM This program contains the Soft Tissue Lesions section of the Dental
pain program. Control is passed to it from the main program (DENTAL)
when the user selects "A Clinical Change in Oral/Facial Tissues" (#3)
from the Main Menu.

REM This program was modified last on 2/13/89 by Cindy Burgess-Russotti.

DEFINT A-Z

REM Arrays for DENTAL and DIFF

```
dim option$(10, 2), opline(10)
dim z(35), response(92), corpresp(36)
```

REM Arrays for window routines.

```
DIM WINDscratt(5), WINDframatt(5), WINDheader$(5)
DIM WINDrow(5), WINDcol(5), WINDheight(5), WINDwidth(5)
DIM wind%(2000, 5)
DIM WINDrowptr(5), WINDcolptr(5)      'UL corner of frame
```

REM Arrays for definition routines.

```
DIM item$(120), dindx(120, 2), disease$(34), disindx(34, 2)
```

REM Include common statements for all modules.

```
rem $include: 'dentcomm.bas'
rem $include: 'windcomm.bas'
```

```
wherefrom$="diff" 'Set flag to show DIFF has been executed.
ptr$=chr$(16)+chr$(16) 'Pointer character
blanks2$=" "
col=0
begr=1:begc=1:endr=24:endc=80:scrollines=0:attrib=0
```

REM Initialize variables for color or momochrome.

```
if mon$="m" or mon$="M" then
   blink=16:highlight=15:normal=7:bground=0:border=0:quescolor=15
   keyline=7:keylettr=0:ptrcolor=15:respbar=7:resplettr=0:astrsk=15
   keyline2=15:keylettr2=0

      REM definition routine colors

   defkeyline=7:defkeylettr=0:def1f=-112:def1s=7
   def2f=-112:def2s=7:select1f=-112:select2f=-112:select2s=7
else
   blink=16:highlight=14:normal=7:bground=0:border=0:quescolor=15
   keyline=1:keylettr=7:ptrcolor=12:respbar=7:resplettr=1:astrsk=14
   keyline2=3:keylettr2=1

      REM definition routine colors

   defkeyline=3:defkeylettr=0:def1f=-116:def1s=48
   def2f=-32:def2s=113:select1f=-23:select2f=-116:select2s=48
end if

   REM Print instructions page.


   CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
   COLOR highlight, bground
   locate 2, 26:PRINT "Soft Tissue Lesions Section"
   color normal, bground
   color highlight, bground
   locate 5, 34:PRINT "Instructions"
   color normal, bground
   locate 7, 3:PRINT "Definitive diagnosis of a soft tissue lesion usually
cannot be made without"
   locate 8, 3:PRINT "microscopic examination of biopsied tissue."
   locate 10, 3:PRINT "This section of the program will present a
differential diagnosis for various
   locate 11, 3:PRINT "soft tissue lesions."
   locate 13, 3:PRINT "Diagnoses in the differential list that have an
asterisk (";
   color astrsk, bground:print "*";
   color normal, bground:print ") beside them"
   locate 14, 3:PRINT "should be investigated as possible life-threatening
or mission-threatening"
   locate 15, 3:PRINT "situations.  This does not imply that the other
possible diagnoses will not"
   locate 16, 3:PRINT "or cannot lead to a mission-threatening situation.
```

All situations should be"
    locate 17, 3:print "followed-up!"
    locate 19, 3:PRINT "Please carefully select the primary area of concern
on the soft tissue"
    locate 20, 3:PRINT "lesions menu. When indicated, press Function key 9
(F9) or 10 (F10)"
    locate 21, 3:PRINT "to go to the Main Menu or the Soft Tissue Lesions
Menu, respectively."
    LOCATE 25, 1:print "Press RETURN to continue.";
    x$=input$(1)

REM Clear screen, draw box, and display Soft Tissue Lesions Menu.

softmenu:

    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
    call box (begr, begc, endr, endc)
call initoptions
color highlight, bground
locate 2, 28:print "Soft Tissue Lesions Menu"
color normal, bground
option$(1, 1)= " 1. Gingival Changes"
option$(2, 1)= " 2. Tissue Color Changes"
option$(3, 1)= " 3. Vesicles, Bullae, or Ulcers"
option$(4, 1)= " 4. Oral Nodules or Enlargements"
option$(5, 1)= " 5. Tongue (Pain, Morphologic Changes)"
option$(6, 1)= " 6. Neck/Face/Cheek Masses"
option$(7, 1)= " 7. Quit"

REM Initialize variables.

    SA=0:SB=0:SC=0:SZ=0:MW=0:MB=0:MY=0:MP=0
    MR=0:SH=0:SI=0:SJ=0:SK=0:P=0

    tempresponse=response(1)   *'save response(1), response for main* menu
    erase response   *'before erasing response array*
    response(1)=tempresponse

longest=39
numops=7
call prioptions
oprow=oprow-(numops*2)

locate 20, 5:color highlight, bground:print "Note: ";

locate 21, 7:color normal, bground:print "Use No. 2 above for gingival color changes. For primary complaints"
locate 22, 7:PRINT "of gingival inflammation or pain, use the Main Menu first."

REM Display instruction line at bottom of screen.

locate 25, 1:color keyline, keyline:print space$(80);
locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print " Main Menu";
locate 25, 59:color normal, bground:print " F7 ";:color keylettr,
keyline:print " Definitions";
color normal, bground

ans=0

call getresp   *'Get user's response.*

softmenu=ans
SA=ans
response(80)=SA

if ans=67 then
   goto mainmenu   *'If user pressed the "F9" key go back to the Main Menu in*
the main program (DENTAL).
end if

pause!=timer+.5
do while TIMER < pause!
loop

locate 25, 1:color keyline, keyline:print space$(80);
locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print " Main Menu";
locate 25, 26:color normal, bground:print " F10 ";:color keylettr,
keyline:print " Soft Tissue Lesions Menu";
locate 25, 59:color normal, bground:print " F7 ";:color keylettr,
keyline:print " Definitions";
color normal, bground

REM branch according to user's response

   IF SA = 1 THEN GOTO 20690

```
        IF SA = 2 THEN  GOTO 20970
        IF SA = 3 THEN  GOTO 21730
        IF SA = 4 THEN  GOTO 21870
        IF SA = 5 THEN  GOTO 22010
        IF SA = 6 THEN  GOTO 22160
        IF SA = 7 THEN  GOTO endit


20690 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions
ques$="What is the nature of the gingival problem?"
option$(1, 1)=" 1. Desquamation"
option$(2, 1)=" 2. Atrophy or ulceration"
option$(3, 1)=" 3. Localized hyperplastic, hemorrhagic lesions"
option$(4, 1)=" 4. Generalized hyperplastic, hemorrhagic lesions"
option$(5, 1)=" 5. Localized hyperplastic, non-hemorrhagic lesions"
option$(6, 1)=" 6. Generalized hyperplastic, hemorrhagic lesions"
option$(7, 1)=" 7. Cystic lesions"
option$(8, 1)=" 8. None of the above"

longest=52
numops=8
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
  goto softmenu
end if

SB=ans
response(81)=SB

pause!=timer+.5
do while TIMER  < pause!
loop

     IF SB = 8 THEN  GOTO softmenu
     IF (SB = 1) OR (SB = 2) OR (SB = 3) OR (SB = 4) OR (SB =5) OR (SB = 6)
```

OR (SB = 7) THEN GOTO printdg

20840 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions
ques$="What is the nature of the mucosal problem?"
option$(1, 1)=" 1. Tissue color changes"
option$(2, 1)=" 2. Vesicles, bullae, or ulcers"
option$(3, 1)=" 3. Nodules or enlargements"
option$(4, 1)=" 4. None of the above"

longest=32
numops=4
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
  goto softmenu
end if

SZ=ans
response(82)=SZ

pause!=timer+.5
do while TIMER < pause!
loop

      IF SZ = 1 THEN GOTO 20970
      IF SZ = 2 THEN GOTO 21730
      IF SZ = 3 THEN GOTO 21870
      IF SZ = 4 THEN GOTO softmenu

20970 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="What is the color of the tissue lesion(s)?"

```
option$(1, 1)=" 1. White"
option$(2, 1)=" 2. Red"
option$(3, 1)=" 3. Brown and/or black"
option$(4, 1)=" 4. Blue and/or purple"
option$(5, 1)=" 5. Yellow"
option$(6, 1)=" 6. None of the above"

longest=22
numops=6
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

SC=ans
response(83)=SC

pause!=timer+.5
do while TIMER < pause!
loop


      IF SC = 1 THEN  GOTO 21140
      IF SC = 2 THEN  GOTO 21300
      IF SC = 3 THEN  GOTO 21410
      IF SC = 4 THEN  GOTO 21530
      IF SC = 5 THEN  GOTO 21630
      IF SC = 6 THEN  GOTO softmenu


21140 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="What is the nature of the white lesion(s)?"
option$(1, 1)=" 1. Keratotic non-sloughing, non-ulcerated, non-eroded, "
option$(1, 2)="    non-papillary lesion(s)"
```

```
option$(2, 1)=" 2. Keratotic non-sloughing, non-ulcerated, non-eroded, "
option$(2, 2)="   papillary lesion(s)"
option$(3, 1)=" 3. Keratotic non-sloughing, ulcerated, eroded, "
option$(3, 2)="   non-papillary lesion(s)"
option$(4, 1)=" 4. Keratotic non-sloughing, ulcerated, eroded, "
option$(4, 2)="   papillary lesion(s)"
option$(5, 1)=" 5. Non-keratotic, sloughing lesion(s)"
option$(6, 1)=" 6. None of the above"


longest=56
numops=6
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
  goto softmenu
end if

MW=ans
response(84)=MW

pause!=timer+.5
do while TIMER < pause!
loop


    IF (MW = 6) THEN  GOTO softmenu
    IF (MW = 1) OR (MW = 2) OR (MW = 3) OR (MW = 4) OR (MW = 5) THEN  GOTO
printdg



21300 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions
ques$="What is the nature of the red lesion(s)?"
option$(1, 1)=" 1. Single exophytic lesion"
option$(2, 1)=" 2. Single non-exophytic lesion"
option$(3, 1)=" 3. Generalized or multiple exophytic lesions"
```

```
option$(4, 1)=" 4. Generalized or multiple non-exophytic lesions"
option$(5, 1)=" 5. None of the above"

longest=50
numops=5
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

MR=ans
response(85)=MR

pause!=timer+.5
do while TIMER < pause!
loop


     IF MR=5 THEN GOTO softmenu
     IF (MR = 1) OR (MR = 2) OR (MR = 3) OR (MR = 4) THEN  GOTO printdg


21410 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="What is the nature of the brown and/or black lesion(s)?"

option$(1, 1)=" 1. Single exophytic lesion"
option$(2, 1)=" 2. Single non-exophytic lesion"
option$(3, 1)=" 3. Generalized or multiple exophytic lesions"
option$(4, 1)=" 4. Generalized or multiple non-exophytic lesions"
option$(5, 1)=" 5. None of the above"

longest=50
numops=5
qrow=2
```

```
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
  goto softmenu
end if

MB=ans
response(86)=MB

pause!=timer+.5
do while TIMER < par
loop


    IF MB = 5 THEN  GOTO softmenu
    IF (MB = 1) OR (MB = 2) OR (MB = 3) OR (MB = 4) THEN  GOTO printdg


21530 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="What is the nature of the blue and/or purple lesion(s)?"
option$(1, 1)=" 1. Single lesion"
option$(2, 1)=" 2. Generalized or multiple lesions"
option$(3, 1)=" 3. None of the above"

longest=36
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
```

```
        goto softmenu
end if

MP=ans
response(87)=MP

pause!=timer+.5
do while TIMER < pause!
loop


        IF MP = 3 THEN  GOTO softmenu
        IF (MP = 1) OR (MP = 2) THEN GOTO printdg


21630 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="What is the nature of the yellow lesion(s)?"
option$(1, 1)=" 1. Single lesion"
option$(2, 1)=" 2. Generalized or multiple lesions"
option$(3, 1)=" 3. None of the above"

longest=36
numops=3
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

MY=ans
response(88)=MY

pause!=timer+.5
do while TIMER < pause!
loop
```

```
    IF MY = 3 THEN  GOTO softmenu
    IF (MY = 1) OR (MY = 2) THEN GOTO printdg


21730 call scrollup (begr+1, begc+1, endr-1, endc-1, scrolllines, attrib)
call initoptions

ques$="Which of the following describe the condition?
option$(1, 1)=" 1. Acute vesicles"
option$(2, 1)=" 2. Chronic vesicles"
option$(3, 1)=" 3. Acute bullae"
option$(4, 1)=" 4. Chronic bullae"
option$(5, 1)=" 5. Acute ulcers"
option$(6, 1)=" 6. Chronic ulcers"
option$(7, 1)=" 7. None of the above"

longest=21
numops=7
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
  goto mainmenu
elseif ans=68 then
  goto softmenu
end if

SH=ans
response(89)=SH

pause!=timer+.5
do while TIMER < pause!
loop


    IF SH = 7 THEN  GOTO softmenu
    IF (SH = 1) OR (SH = 2) OR (SH = 3) OR (SH = 4) OR (SH =5) OR (SH = 6)
THEN  GOTO printdg
```

```
21870 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="Which of the following descriptions applies?"
option$(1, 1)=" 1. Small firm non-hemorrhagic, lobulated lesions"
option$(2, 1)=" 2. Extensive firm non-hemorrhagic, lobulated lesions"
option$(3, 1)=" 3. Single firm non-hemorrhagic nodule"
option$(4, 1)=" 4. Multiple firm non-hemorrhagic nodules"
option$(5, 1)=" 5. Single bony lump or nodule"
option$(6, 1)=" 6. Multiple or extensive bony enlargements or nodules"
option$(7, 1)=" 7. None of the above"

longest=55
numops=7
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

SI=ans
response(90)=SI

pause!=timer+.5
do while TIMER < pause!
loop


    IF SI = 7 THEN  GOTO softmenu
    IF (SI = 1) OR (SI = 2) OR (SI = 3) OR (SI = 4) OR (SI = 5) OR (SI = 6)
THEN  GOTO printdg


22010 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions
```

```
ques$="Which of the following categories applies?"
option$(1, 1)=" 1. Macroglossia (enlarged tongue)"
option$(2, 1)=" 2. Microglossia (small tongue)"
option$(3, 1)=" 3. Cleft in tongue"
option$(4, 1)=" 4. Fissured tongue"
option$(5, 1)=" 5. Supernumerary tongue"
option$(6, 1)=" 6. Smooth tongue"
option$(7, 1)=" 7. Glossodynia (pain in tongue)"
option$(8, 1)=" 8. None of the above"

longest=35
numops=8
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

SJ=ans
response(91)=SJ

pause!=timer+.5
do while TIMER < pause!
loop


    IF SJ = 8 THEN  GOTO softmenu
    IF (SJ = 1) OR (SJ = 2) OR (SJ = 3) OR (SJ = 4) OR (SJ = 5) OR (SJ = 6)
OR (SJ = 7) THEN GOTO printdg


22160 call scrollup (begr+1, begc+1, endr-1, endc-1, scrollines, attrib)
call initoptions

ques$="Which of the following applies to the mass(es)?"
option$(1, 1)=" 1. Acute parotid swelling"
```

```
option$(2, 1)=" 2. Chronic parotid swelling"
option$(3, 1)=" 3. Acute discrete nodules, non-parotid area"
option$(4, 1)=" 4. Chronic discrete nodules, non-parotid area"
option$(5, 1)=" 5. Acute extensive diffuse swelling, non-parotid area"
option$(6, 1)=" 6. Chronic extensive diffuse swelling, non-parotid area"
option$(7, 1)=" 7. None of the above"

longest=57
numops=7
qrow=2
qcol=5
call priques((ques$))
call prioptions
ans=0
call getresp

if ans=67 then
   goto mainmenu
elseif ans=68 then
   goto softmenu
end if

SK=ans
response(92)=Sk

pause!=timer+.5
do while TIMER < pause!
loop


    IF SK = 7 THEN  GOTO softmenu
    IF (SK = 1) OR (SK = 2) OR (SK = 3) OR (SK = 4) OR (SK =5) OR (SK = 6)
THEN  GOTO printdg


    REM Write data to disk.

printdg:
    call wrtdat

    REM Clear screen, draw box, display differential diagnosis.

printdgagain:
    call scrollup (begr+1, begc+1, endr, endc-1, scrollines, attrib)
```

```
        call box (begr, begc, endr-1, endc)
        color highlight, bground
        locate 2, 28:PRINT "Differential Diagnosis"
locate 24, 1:color keyline2, keyline2:print space$(80);
locate 24, 5:color normal, bground:print " Shift + PrtSc ";:color keylettr2,
keyline2:print " Print Screen";
locate 24, 37:color normal, bground:print " PgDn ";:color keylettr2,
keyline2:print " Next Page";
locate 24, 59:color normal, bground:print " PgUp ";:color keylettr2,
keyline2:print " Previous Page";
locate 25, 1:color keyline, keyline:print space$(80);
locate 25, 5:color normal, bground:print " F9 ";:color keylettr,
keyline:print " Main Menu";
locate 25, 26:color normal, bground:print " F10 ";:color keylettr,
keyline:print " Soft Tissue Lesions Menu";
locate 25, 59:color normal, bground:print " F7 ";:color keylettr,
keyline:print " Definitions";
color normal, bground

if sb=1 then
        locate 4, 22:color highlight, bground:PRINT "Desquamative Lesions of
Gingiva":color normal, bground
        locate 6, 22:PRINT "1.  ";chr$(34);"Desquamative gingivitis";chr$(34)
        locate 7, 22:PRINT "2.  Hormonal changes (ex. Puberty)"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 8, 22:PRINT "3.  Bullous lichen planus"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 9, 22:PRINT "4.  Benign mucous membrane pemphigoid"
        locate 10, 22:PRINT "5.  Nutritional deficiencies"
        locate 11, 22:PRINT "6.  Pernicious anemia"
        locate 12, 22:PRINT "7.  Atopic and contact stomatitis"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 13, 22:PRINT "8.  Drug idiosyncrasies"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 14, 22:PRINT "9.  Erythema multiforme"
        locate 15, 22:PRINT "10. Primary herpes simplex"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 16, 22:PRINT "11. Pemphigus vulgaris"
        locate  , 20:color astrsk, bground:print "*";:color normal, bground
        locate 17, 22:PRINT "12. Epidermolysis bullosa"
        page=1:npages=1
        call diffpressret
        if ans=67 then
        goto mainmenu
```

```
    elseif ans=68 then
   goto softmenu
    end if

elseif sb=2 then
23540  color highlight, bground
    locate 4, 24:PRINT "Atrophy or Ulceration of Gingiva"
    color normal, bground
    locate 6, 8:PRINT "1.  Necrotizing ulcerative gingivitis (NUG, ANUG)"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 7, 8:PRINT "2.  Diabetes mellitus (uncontrolled)"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 8, 8:PRINT "3.  Leukemia (late)"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 9, 8:PRINT "4.  Cyclic neutropenia"
    locate 10, 8:PRINT "5.  Syphilis"
    locate 11, 8:PRINT "6.  Gonorrhea"
    locate 12, 8:PRINT "7.  Herpetic gingivostomatitis (primary)"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 13, 8:PRINT "8.  Erythema multiforme"
    locate 14, 8:PRINT "9.  Habits/trauma"
    locate 15, 8:PRINT "10. Nutritional deficiency"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 16, 8:PRINT "11. Lupus vulgaris"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 17, 8:PRINT "12. Porphyria"
    locate 18, 8:PRINT "13. Apthous stomatitis"
    locate 19, 8:PRINT "14. Periadenitis mucosa necrotica recurrens
(Sutton's disease)"
    locate , 6:color astrsk, bground:print "*";:color normal, bground
    locate 20, 8:PRINT "15. ARC/AIDS"
    page=1:npages=1
    call diffpressret
    if ans=67 then
   goto mainmenu
    elseif ans=68 then
   goto softmenu
    end if

elseif sb=3 then
23740  color highlight, bground
    locate 4, 13:PRINT "Localized Hyperplastic, Hemorrhagic Lesions of
Gingiva"
    color normal, bground
```

```
    locate 6, 13:PRINT "1.  Pyogenic granuloma"
    locate 7, 13:PRINT "2.  Peripheral giant cell granuloma"
    locate 8, 13:PRINT "3.  Food impaction (early)"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 9, 13:PRINT "4.  Metastatic tumor"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 10, 13:PRINT "5.  Mycotic infection"
    locate 11, 13:PRINT "6.  Fistulous tract from periapical
abscess/parulis"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 12, 13:PRINT "7.  Hyperparathyroidism (brown tumor)"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 13, 13:PRINT "8.  Local malignancy"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 14, 13:PRINT "9.  Pericoronitis"
    locate 15, 13:PRINT "10. Epulis granulomatosum"
    locate 16, 13:PRINT "11. Antral polyp from oroantral fistula"
    locate 17, 13:PRINT "12. Pulp polyp"
    locate 18, 13:PRINT "13. Hemangioma"
    locate , 11:color astrsk, bground:print "*";:color normal, bground
    locate 19, 13:PRINT "14. Kaposi's sarcoma/ARC/AIDS"
    page=1:npages=1
    call diffpressret
    if ans=67 then
  goto mainmenu
    elseif ans=68 then
  goto softmenu
    end if


elseif sb=4 then
23940  color highlight, bground
    locate 4, 11:PRINT "Generalized Hyperplastic, Hemorrhagic Lesions of
Gingiva"
    color normal, bground
    locate 6, 20:color astrsk, bground:print "*";:color normal, bground
    locate 6, 22:PRINT "1.  Leukemia (early)"
    locate 7, 22:PRINT "2.  Gingivitis"
    locate 8, 22:PRINT "3.  Hormonal changes (ex. puberty)"
    locate 9, 22:PRINT "4.  Xerostomia (dry mouth)"
    locate 10, 22:PRINT "5.  Mouth breathing"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 11, 22:PRINT "6.  Diabetes (uncontrolled)"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
```

```
      locate 12, 22:PRINT "7.  Wegener's granulomatosis"
      locate , 20:color astrsk, bground:print "*";:color normal, bground
      locate 13, 22:PRINT "8.  Cyclic neutropenia"
      locate , 20:color astrsk, bground:print "*";:color normal, bground
      locate 14, 22:PRINT "9.  Cushing's syndrome"
      locate , 20:color astrsk, bground:print "*";:color normal, bground
      locate 15, 22:PRINT "10. Yellow fever"
      locate 16, 22:PRINT "11. Scurvy"
      locate 17, 22:PRINT "12. Vitamin A deficiency"
      locate , 20:color astrsk, bground:print "*";:color normal, bground
      locate 18, 22:PRINT "13. Crohn's disease"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if


elseif sb=5 then
24130  color highlight, bground
      locate 4, 11:PRINT "Localized Hyperplastic, Non-hemorrhagic Lesions of
Gingiva"
      color normal, bground
      locate 6, 23:PRINT "1. Irritation fibroma"
      locate 7, 23:PRINT "2. Epulis fissuratum"
      locate 8, 23:PRINT "3. Giant cell fibroma"
      locate 9, 23:PRINT "4. Peripheral ossifying fibroma"
      locate 10, 23:PRINT "5. Pulp polyp"
      locate 11, 23:PRINT "6. Traumatic neuroma"
      locate 12, 23:PRINT "7. Neurofibroma"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if


elseif sb=6 then
24260  color highlight, bground
      locate 4, 7:PRINT "Generalized Hyperplastic, Non-hemorrhagic Lesions of
```

```
the Gingiva"
      color normal, bground
      locate 6, 13:PRINT "1. Idiopathic gingival fibromatosis"
      locate 7, 13:PRINT "2. Hereditary gingival fibromatosis"
      locate 8, 13:PRINT "3. Gingival hyperplasia, drug-induced (ex.
Dilantin)"
      locate 9, 13:PRINT "4. Amyloidosis"
      locate 10, 13:PRINT "5. Hemifacial hypertrophy"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if



elseif sb=7 then
24370  color highlight, bground
      locate 4, 26:PRINT "Cystic Lesions of Gingiva"
      color normal, bground
      locate 7, 26:PRINT "1. Eruption cyst"
      locate 8, 26:PRINT "2. Gingival cyst"
      locate 9, 26:PRINT "3. Parulis"
      locate 10, 26:PRINT "4. Nasoalveolar cyst"
      locate 11, 26:PRINT "5. Nasopalatine duct cyst"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if



elseif mw=1 then
mw1:
      color highlight, bground
      locate 4, 4:PRINT "Keratotic Non-sloughing, Non-ulcerated, Non-eroded,
Non-papillary Lesions"
      color normal, bground
      locate 6, 23:PRINT "1. Linea alba"
```

```
locate 7, 23:PRINT "2.  Hyperkeratosis (leukoplakia)"
locate 8, 23:PRINT "3.  Nicotine stomatitis"
locate 9, 23:PRINT "4.  Snuff/tobacco pouch"
locate 10, 23:PRINT "5.  Actinic cheilosis"
locate 11, 23:PRINT "6.  Leukoedema"
locate 12, 23:PRINT "7.  Scar tissue"
locate 13, 23:PRINT "8.  Lichen planus"
locate 14, 23:PRINT "9.  Syphlitic glossitis"
locate 15, 23:PRINT "10. White sponge nevus"
page=1:npages=2
call diffpressret
if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  end if


CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
color highlight, bground
locate 4, 4:PRINT "Keratotic Non-sloughing, Non-ulcerated, Non-eroded,
Non-papillary Lesions"
color normal, bground
locate 6, 23:PRINT "11. Benign hereditary intra-epithelial
dyskeratosis"
locate 7, 23:PRINT "12. Pachyonychia congenita"
locate 8, 23:PRINT "13. Dyskeratosis congenita"
locate 9, 23:PRINT "14. Acanthosis nigricans (buccal only)"
locate 10, 23:PRINT "15. Hyperkeratosis palmo-plantaris and gingivae"
locate 11, 23:PRINT "16. Submucous fibrosis"
locate 12, 23:PRINT "17. Skin graft"
locate 13, 23:PRINT "18. Hypovitaminosis A"
locate 14, 23:PRINT "19. Syphilitic glossitis (rare)"
page=2:npages=2
call diffpressret
if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  elseif ans=73 then
CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
goto mw1
  end if
```

```
elseif mw=2 then
24750  color highlight, bground
       locate 4, 5:PRINT "Keratotic Non-sloughing, Non-ulcerated, Non-eroded,
Papillary Lesions"
       color normal, bground
       locate 6, 25:PRINT "1.  Fordyce granules"
       locate 7, 25:PRINT "2.  White hairy tongue"
       locate 8, 25:PRINT "3.  Verrucous hyperkeratosis"
       locate 9, 25:PRINT "4.  Papilloma/papillomatosis
       locate 10, 25:PRINT "5.  Verruca vulgaris"
       locate   , 23:color astrsk, bground:print "*";:color normal, bground
       locate 11, 25:PRINT "6.  Verrucous carcinoma"
       locate   , 23:color astrsk, bground:print "*";:color normal, bground
       locate 12, 25:PRINT "7.  Koplick spots (measles)"
       locate 13, 25:PRINT "8.  Verrucous xanthoma"
       locate 14, 25:PRINT "9.  Epidermoid cyst"
       locate 15, 25:PRINT "10. Lymphoepithelial cyst"
       locate 16, 25:PRINT "11. Acanthosis nigricans"
       locate   , 23:color astrsk, bground:print "*";:color normal, bground
       locate 17, 25:PRINT "12. Darier's disease"
       locate   , 23:color astrsk, bground:print "*";:color normal, bground
       locate 18, 25:PRINT "13. Hairy leukoplakia/ARC/AIDS"
       page=1:npages=1
       call diffpressret
       if ans=67 then
   goto mainmenu
     elseif ans=68 then
   goto softmenu
       end if




elseif mw=3 then

24930  color highlight, bground
       locate 4, 6:PRINT "Keratotic Non-sloughing, Ulcerated, Eroded,
Non-papillary Lesions"
       color normal, bground
       locate 6, 20:PRINT "1.  Hyperkeratosis (speckled leukoplakia)"
       locate 7, 20:PRINT "2.  Nicotine stomatitis"
       locate 8, 20:PRINT "3.  Actinic cheilosis"
       locate 9, 20:PRINT "4.  Chronic cheek biting"
       locate 10, 20:PRINT "5.  Geographic tongue"
       locate 11, 20:PRINT "6.  Benign migratory stomatitis (ectopic
```

geographic tongue)"
```
      locate  , 18:color astrsk, bground:print "*";:color normal, bground
      locate 12, 20:PRINT "7.  Erosive lichen planus"
      locate  , 18:color astrsk, bground:print "*";:color normal, bground
      locate 13, 20:PRINT "8.  Premalignant epithelial dysplasia"
      locate  , 18:color astrsk, bground:print "*";:color normal, bground
      locate 14, 20:PRINT "9.  Carcinoma in situ"
      locate  , 18:color astrsk, bground:print "*";:color normal, bground
      locate 15, 20:PRINT "10. Squamous cell carcinoma"
      locate 16, 20:PRINT "11. Syphilitic glossitis"
      locate 17, 20:PRINT "12. Discoid lupus erythematosus"
      locate  , 18:color astrsk, bground:print "*";:color normal, bground
      locate 18, 20:PRINT "13. Reiter's disease"
      locate 19, 20:PRINT "14. Oral psoriasis"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if




elseif mw=4 then
25130 color highlight, bground
      locate 4, 8:PRINT "Keratotic Non-sloughing, Ulcerated, Eroded,
Papillary lesions"
      color normal, bground
      locate 6, 24:color astrsk, bground:print "*";:color normal, bground
      locate 6, 26:PRINT "1. Verrucous carcinoma"
      locate 7, 24:color astrsk, bground:print "*";:color normal, bground
      locate 7, 26:PRINT "2. Squamous cell carcinoma"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if




elseif mw=5 then
```

```
25210  color highlight, bground
       locate 4, 23:PRINT "Sloughing, Non-keratotic Lesions"
       color normal, bground
       locate 6, 23:PRINT "1.  Materia alba/plaque"
       locate 7, 23:PRINT "2.  Sloughing traumatic lesions"
       locate 8, 23:PRINT "3.  Candidiasis (moniliasis)"
       locate 9, 23:PRINT "4.  White-coated tongue"
       locate 10, 23:PRINT "5.  Chemical burn (ex. ASA)"
       locate 11, 23:PRINT "6.  Thermal burn"
       locate 12, 23:PRINT "7.  Stomatitis venenata"
       locate 13, 23:PRINT "8.  Stomatitis medicamentosa"
       locate 14, 23:PRINT "9.  Radiation mucositis"
       locate  , 21:color astrsk, bground:print "*";:color normal, bground
       locate 15, 23:PRINT "10. Diptheria"
       locate  , 21:color astrsk, bground:print "*";:color normal, bground
       locate 16, 23:PRINT "11. Ulcer/bed (various diseases)"
       locate  , 21:color astrsk, bground:print "*";:color normal, bground
       locate 17, 23:PRINT "12. Noma (rare)
       locate  , 21:color astrsk, bground:print "*";:color normal, bground
       locate 18, 23:PRINT "13. Heavy metal poisoning"
       locate 19, 23:PRINT "14. ";chr$(34);"Snuff-dipper's lesion";chr$(34)
       page=1:npages=1
       call diffpressret
       if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if


elseif mr=1 then
25410  color highlight, bground
       locate 4, 25:PRINT "Single Exophytic Red Lesions"
       color normal, bground
       locate 6, 19:PRINT "1.  Hematoma"
       locate 7, 19:PRINT "2.  Hemangioma"
       locate , 17:color astrsk, bground:print "*";:color normal, bground
       locate 8, 19:PRINT "3.  Pericoronitis"
       locate 9, 19:PRINT "4.  Pyogenic granuloma"
       locate 10, 19:PRINT "5.  Peripheral giant cell granuloma"
       locate , 17:color astrsk, bground:print "*";:color normal, bground
       locate 11, 19:PRINT "6.  Squamous cell carcinoma"
       locate , 17:color astrsk, bground:print "*";:color normal, bground
       locate 12, 19:PRINT "7.  Mycotic infection"
```

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      locate 13, 19:PRINT "8.  Median rhomboid glossitis"
      locate 14, 19:PRINT "9.  Traumatic angiomatous lesion"
      locate 15, 19:PRINT "10. Eruption cyst"
      locate 16, 19:PRINT "11. Abscess (periodontal or endodontic)"
      page=1:npages=1
      call diffpressret
      if ans=67 then
   goto mainmenu
      elseif ans=68 then
   goto softmenu
      end if




elseif mr=2 then
25580  color highlight, bground
      locate 4, 23:PRINT "Single Non-exophytic Red Lesions"
      color normal, bground
      locate 6, 21:PRINT "1. Hemangioma, Sturge-Weber syndrome"
      locate 7, 21:PRINT "2. Burns (thermal or chemical)"
      locate 8, 21:PRINT "3. Non-specific inflammation"
      locate 9, 21:PRINT "4. Trauma (ex. denture sore)"
      locate  , 19:color astrsk, bground:print "*";:color normal, bground
      locate 10, 21:PRINT "5. Carcinoma in situ"
      locate  , 19:color astrsk, bground:print "*";:color normal, bground
      locate 11, 21:PRINT "6. Squamous cell carcinoma"
      locate  , 19:color astrsk, bground:print "*";:color normal, bground
      locate 12, 21:PRINT "7. Erythroplakia"
      locate  , 19:color astrsk, bground:print "*";:color normal, bground
      locate 13, 21:PRINT "8. Ulcers (see ulcers)"
      locate 14, 21:PRINT "9. Median rhomboid glossitis"
      page=1:npages=1
      call diffpressret
      if ans=67 then
   goto mainmenu
      elseif ans=68 then
   goto softmenu
      end if




elseif mr=3 then
25730  color highlight, bground
      locate 4, 16:PRINT "Generalized or Multiple Exophytic Red Lesions"
```

```
    color normal, bground
    locate 6, 18:PRINT "1. Gingivitis (see other gingival diseases)"
    locate 7, 18:PRINT "2. Hemangiomas"
    locate 8, 18:PRINT "3. Hematomas/purpuras"
    locate 9, 18:PRINT "4. Lymphangioma"
    locate 10, 18:PRINT "5. Papillary hyperplasia of the palate"
    locate 11, 18:PRINT "6. Lingual varicosities"
    locate  , 16:color astrsk, bground:print "*";:color normal, bground
    locate 12, 18:PRINT "7. Pyostomatitis vegetans"
    page=1:npages=1
    call diffpressret
    if ans=67 then
goto mainmenu
    elseif ans=68 then
goto softmenu
    end if



elseif mr=4 then
mr4:
    color highlight, bground
    locate 4, 15:PRINT "Generalized or Multiple Non-exophytic Red Lesions"
    color normal, bground
    locate 6, 19:PRINT "1.  Hemangiomas, Sturge-Weber syndrome"
    locate 7, 19:PRINT "2.  Hereditary hemorrhagic telangiectasia"
    locate  , 17:color astrsk, bground:print "*";:color normal, bground
    locate 8, 19:PRINT "3.  Erythema multiforme"
    locate  , 17:color astrsk, bground:print "*";:color normal, bground
    locate 9, 19:PRINT "4.  Allergic reaction"
    locate 10, 19:PRINT "5.  Non-specific inflammation"
    locate 11, 19:PRINT "6.  Radiation stomatitis/xerostomia"
    locate 12, 19:PRINT "7.  Denture sore mouth (candidiasis)"
    locate  , 17:color astrsk, bground:print "*";:color normal, bground
    locate 13, 19:PRINT "8.  Scarlet fever"
    locate  , 17:color astrsk, bground:print "*";:color normal, bground
    locate 14, 19:PRINT "9.  Measles"
    locate 15, 19:PRINT "10. Geographic tongue"
    locate 16, 19:PRINT "11. Vitamin deficiencies"
    locate 17, 19:PRINT "12. Nicotine stomatitis (early)"
    page=1:npages=2
    call diffpressret
    if ans=67 then
goto mainmenu
```

```
  elseif ans=68 then
goto softmenu
  end if



  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
  color highlight, bground
  locate 4, 15:PRINT "Generalized or Multiple Non-exophytic Red Lesions"
  color normal, bground
  locate 6, 22:color astrsk, bground:print "*";:color normal, bground
  locate 6, 24:PRINT "13. Petechiae:"
  locate 7, 24:PRINT "          -- Leukemias"
  locate 8, 24:PRINT "          -- Anemias"
  locate 9, 24:PRINT "          -- Purpuras"
  locate 10, 24:PRINT "           -- Hemophilias"
  locate 11, 24:PRINT "           -- Mononucleosis"
  locate 12, 24:PRINT "           -- Fellatio trauma"
  locate 13, 24:PRINT "           -- Other trauma"
  locate 14, 24:PRINT "           -- Chronic cough"
  locate 15, 24:PRINT "14. Lupus erythematosus"
  page=2:npages=2
  call diffpressret
  if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  elseif ans=73 then
  CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
  goto mr4
  end if



elseif mb=1 then
26160  color highlight, bground
    locate 4, 18:PRINT "Single Exophytic Brown and/or Black Lesions"
    color normal, bground
    locate 6, 15:PRINT "1. Hematoma"
    locate 7, 15:PRINT "2. Pigmented nevi"
    locate 8, 15:PRINT "3. Pigmented irritation fibroma"
    locate , 13:color astrsk, bground:print "*";:color normal, bground
    locate 9, 15:PRINT "4. Malignant melanoma"
    locate 10, 15:PRINT "5. Black hairy tongue"
    locate , 13:color astrsk, bground:print "*";:color normal, bground
```

```
    locate 11, 15:PRINT "6. Peripheral giant cell granuloma
(long-standing)"
    page=1:npages=1
    call diffpressret
    if ans=67 then
  goto mainmenu
    elseif ans=68 then
  goto softmenu
    end if




elseif mb=2 then
26280  color highlight, bground
    locate 4, 16:PRINT "Single Non-exophytic Brown and/or Black Lesions"
    color normal, bground
    locate 6, 24:PRINT "1. Amalgam tatoo"
    locate 7, 24:PRINT "2. Non-amalgam tatoo"
    locate 8, 24:PRINT "3. Ephelis/lentigo (freckle)"
    locate  , 22:color astrsk, bground:print "*";:color normal, bground
    locate 9, 24:PRINT "4. Malignant melanoma"
    locate 10, 24:PRINT "5. Graphite tatoo from pencil"
    page=1:npages=1
    call diffpressret
    if ans=67 then
  goto mainmenu
    elseif ans=68 then
  goto softmenu
    end if




elseif mb=3 then
26390  color highlight, bground
    locate 4, 9:PRINT "Generalized or Multiple Exophytic Brown and/or Black
Lesions"
    color normal, bground
    locate 6, 23:color astrsk, bground:print "*";:color normal, bground
    locate 6, 25:PRINT "  1. Malignant melanoma"
    locate  , 23:color astrsk, bground:print "*";:color normal, bground
    locate 7, 25:PRINT "  2. Purpuras (long-standing)"
    page=1:npages=1
    call diffpressret
    if ans=67 then
```

```
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if




elseif mb=4 then
26470  color highlight, bground
     locate 4, 7:PRINT "Generalized or Multiple Non-exophytic Brown and/or
Black Lesions"
     color normal, bground
     locate 6, 21:color astrsk, bground:print "*";:color normal, bground
     locate 6, 23:PRINT "1. Malignant melanoma"
     locate 7, 23:PRINT "2. Physiologic melanosis (racial pigmentation)"
     locate 8, 23:PRINT "3. Peutz-Jeghers syndrome"
     locate  , 21:color astrsk, bground:print "*";:color normal, bground
     locate 9, 23:PRINT "4. Addison's disease"
     locate  , 21:color astrsk, bground:print "*";:color normal, bground
     locate 10, 23:PRINT "5. Heavy metal poisoning"
     locate  , 21:color astrsk, bground:print "*";:color normal, bground
     locate 11, 23:PRINT "6. Drug ingestion (chloroquine)"
     locate 12, 23:PRINT "7. Syphilis (secondary)"
     page=1:npages=1
     call diffpressret
     if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if




elseif mp=1 then
26600  color highlight, bground
     locate 4, 20:PRINT "Single Blue and/or Purple Lesions"
     color normal, bground
     locate 6, 22:PRINT "1.  Mucocele"
     locate 7, 22:PRINT "2.  Ranula"
     locate 8, 22:PRINT "3.  Eruption cyst"
     locate 9, 22:PRINT "4.  Hematoma"
     locate 10, 22:PRINT "5.  Hemangioma"
     locate 11, 22:PRINT "6.  Traumatic angiomatous lesion"
```

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        locate 12, 22:PRINT "7.  Blue nevus"
        locate , 20:color astrsk, bground:print "*";:color normal, bground
        locate 13, 22:PRINT "8.  Mucoepidermoid carcinoma"
        locate , 20:color astrsk, bground:print "*";:color normal, bground
        locate 14, 22:PRINT "9.  Malignant melanoma"
        locate , 20:color astrsk, bground:print "*";:color normal, bground
        locate 15, 22:PRINT "10. Cystic pleomorphic adenoma"
        locate , 20:color astrsk, bground:print "*";:color normal, bground
        locate 16, 22:PRINT "11. Kaposi's sarcoma/ARC/AIDS"
        page=1:npages=1
        call diffpressret
        if ans=67 then
     goto mainmenu
        elseif ans=68 then
     goto softmenu
        end if


elseif mp=2 then
26760  color highlight, bground
        locate 4, 14:PRINT "Generalized or Multiple Blue and/or Purple Lesions"

        color normal, bground
        locate 6, 27:PRINT "1. Lingual varicosities"
        locate 7, 27:PRINT "2. Hemangiomas"
        locate 8, 27:PRINT "3. Lymphangiomas"
        locate , 25:color astrsk, bground:print "*";:color normal, bground
        locate 9, 27:PRINT "4. Purpuras"
        locate , 25:color astrsk, bground:print "*";:color normal, bground
        locate 10, 27:PRINT "5. Cyanosis"
        locate , 25:color astrsk, bground:print "*";:color normal, bground
        locate 11, 27:PRINT "6. Kaposi's sarcoma/ARC/AIDS"
        page=1:npages=1
        call diffpressret
        if ans=67 then
     goto mainmenu
        elseif ans=68 then
     goto softmenu
        end if


elseif my=1 then
26870  color highlight, bground
        locate 4, 28:PRINT "Single Yellow Lesions"
```

```
      color normal, bground
      locate 6, 15:PRINT "1. Lipoma"
      locate 7, 15:PRINT "2. Epidermoid/dermoid cyst"
      locate 8, 15:PRINT "3. Lymphoepithelial cyst"
      locate 9, 15:PRINT "4. Xanthoma"
      locate 10, 15:PRINT "5. Superficial abscess/fistula"
      locate 11, 15:PRINT "6. Benign lymphoid aggregate"
      locate 12, 15:PRINT "7. Yellow hairy tongue"
      locate 13, 15:PRINT "8. Benign lymphoepithelial cyst (floor of mouth)"
      locate 14, 15:PRINT "9. Verrucous xanthoma"
      page=1:npages=1
      call diffpressret
      if ans=67 then
   goto mainmenu
      elseif ans=68 then
   goto softmenu
      end if


elseif my=2 then
27020  color highlight, bground
      locate 4, 20:PRINT "Generalized or Multiple Yellow Lesions"
      color normal, bground
      locate 6, 24:PRINT "1. Fordyce granules"
      locate   , 22:color astrsk, bground:print "*";:color normal, bground
      locate 7, 24:PRINT "2. Jaundice/icterus"
      locate 8, 24:PRINT "3. Crusting:"
      locate 9, 24:PRINT "    -- Actinic cheilitis"
      locate 10, 24:PRINT "4. Crusting from herpes"
      locate 11, 24:PRINT "     -- Herpes zoster"
      locate 12, 24:PRINT "     -- Herpes simplex"
      locate 13, 24:PRINT "5. Benign lymphoid aggregate"
      locate 14, 24:PRINT "6. Tonsillar (keratotic) plugs"
      locate 15, 24:PRINT "7. Lipoid proteinosis"
      locate , 22:color astrsk, bground:print "*";:color normal, bground
      locate 16, 24:PRINT "8. Carotenemia"
      locate , 22:color astrsk, bground:print "*";:color normal, bground
      locate 17, 24:PRINT "9. Pyostomatitis vegetans"
      page=1:npages=1
      call diffpressret
      if ans=67 then
   goto mainmenu
      elseif ans=68 then
   goto softmenu
```

```
          end if


elseif sh=1 then
27200  color highlight, bground
       locate 4, 27:PRINT "Acute Vesicular Lesions"
       color normal, bground
       locate 6, 24:PRINT "1. Herpes simplex"
       locate 7, 24:PRINT "2. Herpes zoster"
       locate 8, 24:PRINT "3. Herpangina"
       locate 9, 24:PRINT "4. Hand-foot-mouth disease"
       locate 10, 24:PRINT "5. Chickenpox"
       locate  , 22:color astrsk, bground:print "*";:color normal, bground
       locate 11, 24:PRINT "6. Allergic reactions"
       locate 12, 24:PRINT "7. Dermatitis herpetiformis"
       locate  , 22:color astrsk, bground:print "*";:color normal, bground
       locate 13, 24:PRINT "8. Erythema multiforme (early)"
       page=1:npages=1
       call diffpressret
       if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if


elseif sh=2 then
27340  color highlight, bground
       locate 4, 18:PRINT "Chronic Vesicular Lesions (Pseudovesicles)"
       color normal, bground
       locate 6, 25:PRINT "1. Mucocele"
       locate 7, 25:PRINT "2. Parulis"
       locate 8, 25:PRINT "3. Benign lymphoid aggregate"
       page=1:npages=1
       call diffpressret
       if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if


elseif sh=3 then
27430  color highlight, bground
```

```
locate 4, 28:PRINT "Acute Bullous Lesions"
color normal, bground
locate  6, 26:color astrsk, bground:print "*";:color normal, bground
locate 6, 28:PRINT "  1. Allergic reaction"
locate  , 26:color astrsk, bground:print "*";:color normal, bground
locate 7, 28:PRINT "  2. Erythema multiforme"
page=1:npages=1
call diffpressret
if ans=67 then
goto mainmenu
 elseif ans=68 then
goto softmenu
 end if


elseif sh=4 then
27510  color highlight, bground
locate 4, 27:PRINT "Chronic Bullous Lesions"
color normal, bground
locate 6, 19:color astrsk, bground:print "*";:color normal, bground
locate 6, 21:PRINT "1. ";chr$(34);"Desquamative gingivitis";chr$(34)
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 7, 21:PRINT "2. Benign mucous membrane pemphigoid"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 8, 21:PRINT "3. Bullous pemphigoid"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 9, 21:PRINT "4. Pemphigus vulgaris"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 10, 21:PRINT "5. Familial benign chronic pemphigus"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 11, 21:PRINT "6. Bullous lichen planus"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 12, 21:PRINT "7. Epidermolysis bullosa"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 13, 21:PRINT "8. Acrodermatitis enteropathica"
page=1:npages=1
call diffpressret
if ans=67 then
goto mainmenu
 elseif ans=68 then
goto softmenu
 end if

elseif sh=5 then
```

```
27650  color highlight, bground
       locate 4, 33:PRINT "Acute Ulcers"
       color normal, bground
       locate 6, 13:color astrsk, bground:print "*";:color normal, bground
       locate 6, 15:PRINT "1. All acute vesicular and bullous diseases"
       locate 7, 15:PRINT "2. Apthous stomatitis"
       locate 8, 15:PRINT "3. Syphilis (chancre)"
       locate 9, 15:PRINT "4. Gonorrhea
       locate 10, 15:PRINT "5. Necrotizing ulcerative gingivitis (NUG, ANUG)"
       locate 11, 15:PRINT "6. Traumatic ulcer"
       locate 12, 15:PRINT "7. Chemical burn"
       locate 13, 15:PRINT "8. Thermal burn"
       locate 14, 15:PRINT "9. Herpetic gingivostomatitis"
       page=1:npages=1
       call diffpressret
       if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if


elseif sh=6 then
sh6:
       color highlight, bground
       locate 4, 32:PRINT "Chronic Ulcers"
       color normal, bground
       locate 6, 18:PRINT "1. All chronic bullous lesions"
       locate 7, 18:PRINT "2. Large apthous ulcer"
       locate 8, 18:PRINT "3. Periadenitis mucosa necrotica recurrens"
       locate 9, 18:PRINT "4. Syphilis (gumma)
       locate , 16:color astrsk, bground:print "*";:color normal, bground
       locate 10, 18:PRINT "5. Granulomatous mycotic infections"
       locate , 16:color astrsk, bground:print "*";:color normal, bground
       locate 11, 18:PRINT "6. Malignancy"
       locate 12, 18:PRINT "7. Keratoacanthoma"
       locate , 16:color astrsk, bground:print "*";:color normal, bground
       locate 13, 18:PRINT "8. Blood dyscrasias"
       locate , 16:color astrsk, bground:print "*";:color normal, bground
       locate 14, 18:PRINT "9. Noma (rare)
       locate , 16:color astrsk, bground:print "*";:color normal, bground
       locate 15, 18:PRINT "10. Behcet's syndrome"
       page=1:npages=2
       call diffpressret
```

```
    if ans=67 then
goto mainmenu
    elseif ans=68 then
goto softmenu
    end if

    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
    color highlight, bground
    locate 4, 32:PRINT "Chronic Ulcers"
    color normal, bground
    locate 7, 21:color astrsk, bground:print "*";:color normal, bground
    locate 7, 23:PRINT "11. Midline lethal granuloma"
    locate , 21:color astrsk, bground:print "*";:color normal, bground
    locate 8, 23:PRINT "12. Wegener's granulomatosis"
    locate , 21:color astrsk, bground:print "*";:color normal, bground
    locate 9, 23:PRINT "13. Tuberculosis"
    locate 10, 23:PRINT "14. Draining fistula/parulis"
    locate 11, 23:PRINT "15. Lupus erythematosus"
    locate , 21:color astrsk, bground:print "*";:color normal, bground
    locate 12, 23:PRINT "16. Sarcoidosis"
    locate , 21:color astrsk, bground:print "*";:color normal, bground
    locate 13, 23:PRINT "17. Necrotizing sialometaplasia"
    locate 14, 23:PRINT "18. Warty dyskeratoma"
    locate , 21:color astrsk, bground:print "*";:color normal, bground
    locate 15, 23:PRINT "19. Traumatic ulcer"
    page=2:npages=2
    call diffpressret
    if ans=67 then
goto mainmenu
    elseif ans=68 then
goto softmenu
    elseif ans=73 then
    CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
    goto sh6
    end if

elseif si=1 then
28070  color highlight, bground
    locate 4, 17:PRINT "Small Firm Non-hemorrhagic Lobulated lesions"
    color normal, bground
    locate 6, 20:PRINT "1.  Papilloma"
    locate , 18:color astrsk, bground:print "*";:color normal, bground
    locate 7, 20:PRINT "2.  Verruca vulgaris"
    locate 8, 20:PRINT "3.  Lingual tonsil"
```

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          locate 9, 20:PRINT "4.  Folate papilla"
          locate 10, 20:PRINT "5.  Median rhomboid glossitis"
          locate 11, 20:PRINT "6.  Keratoacanthoma"
          locate 12, 20:PRINT "7.  Cutaneous horn"
          locate 13, 20:PRINT "8.  Nevi"
          locate , 18:color astrsk, bground:print "*";:color normal, bground
          locate 14, 20:PRINT "9.  Basal cell carcinoma"
          locate 15, 20:PRINT "10. Neurofibroma"
          locate 16, 20:PRINT "11. Circumvallate papilla (taste bud)"
          page=1:npages=1
          call diffpressret
          if ans=67 then
        goto mainmenu
          elseif ans=68 then
        goto softmenu
          end if


elseif si=2 then
28240  color highlight, bground
          locate 4, 14:PRINT "Extensive Firm Non-hemorrhagic Lobulated Lesions"
          color normal, bground
          locate 6, 20:PRINT "1. Gingival fibromatoses (see gingiva)"
          locate 7, 20:PRINT "2. Amyloidosis"
          locate 8, 20:PRINT "3. Fissured tongue"
          locate 9, 20:PRINT "4. Macroglossia"
          locate 10, 20:PRINT "5. Buccal fat pads"
          locate 11, 20:PRINT "6. Tori"
          page=1:npages=1
          call diffpressret
          if ans=67 then
        goto mainmenu
          elseif ans=68 then
        goto softmenu
          end if


elseif si=3 then
28360  color highlight, bground
          locate 4, 21:PRINT "Single Firm Non-hemorrhagic Nodules"
          color normal, bground
          locate 6, 22:PRINT "1. Irritation fibroma"
          locate 7, 22:PRINT "2. Epulis fissuratum"
          locate 8, 22:PRINT "3. Peripheral ossifying fibroma"
```

```
    locate 9, 22:PRINT "4.  Lingual thyroid"
    locate 10, 22:PRINT "5.  Granular cell myoblastoma"
    locate 11, 22:PRINT "6.  Fibrolipoma"
    locate 12, 22:PRINT "7.  Benign neural tumors"
    locate 13, 22:PRINT "8.  Benign salivary tumors"
    locate 14, 22:PRINT "9.  Choristoma/hamartoma"
    locate 15, 22:PRINT "10. Extraosseous odontogenic tumor"
    locate 16, 22:PRINT "11. Rhabdomyoma"
    locate 17, 22:PRINT "12. Oral-facial-digital syndrome"
    locate 18, 22:PRINT "13. Lymph node"
    page=1:npages=1
    call diffpressret
    if ans=67 then
  goto mainmenu
    elseif ans=68 then
  goto softmenu
    end if

elseif si=4 then
si4:
    color highlight, bground
    locate 4, 20:PRINT "Multiple Firm Non-hemorrhagic Nodules"
    color normal, bground
    locate 6, 20:PRINT "1.  Papillary hyperplasia of the palate"
    locate 7, 20:PRINT "2.  Papillomatosis"
    locate 8, 20:PRINT "3.  Hairy tongue"
    locate 9, 20:PRINT "4.  Accessory tonsillar tissue"
    locate 10, 20:PRINT "5.  Focal epithelial hyperplasia"
    locate 11, 20:PRINT "6.  Neurofibromatosis"
    locate 12, 20:PRINT "7.  Multiple mucosal neuromas syndrome"
    locate 13, 20:PRINT "8.  Nicotine stomatitis (palate)"
    locate 14, 20:PRINT "9.  Amyloidosis"
    locate  , 18:color astrsk, bground:print "*";:color normal, bground
    locate 15, 20:PRINT "10. Sarcoidosis"
    locate  , 18:color astrsk, bground:print "*";:color normal, bground
    locate 16, 20:PRINT "11. Verruca vulgaris, multiple lesions"


    page=1:npages=2
    call diffpressret
    if ans=67 then
  goto mainmenu
    elseif ans=68 then
  goto softmenu
```

```
      end if

      CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
      color highlight, bground
      locate 4, 20:PRINT "Multiple Firm Non-hemorrhagic Nodules"
      color normal, bground
      locate 6, 21:PRINT "12. Focal dermal hypoplasia syndrome"
      locate 7, 21:PRINT "13. Darier's disease"
      locate , 19:color astrsk, bground:print "*";:color normal, bground
      locate 8, 21:PRINT "14. Acanthosis nigricans"
      locate , 19:color astrsk, bground:print "*";:color normal, bground
      locate 9, 21:PRINT "15. Crohn's disease"
      locate 10, 21:PRINT "16. Oral-facial-digital syndrome"
      locate 11, 21:PRINT "17. Lipoid proteinosis"
      locate , 19:color astrsk, bground:print "*";:color normal, bground
      locate 12, 21:PRINT "18. Pyostomatitis vegetans"
      locate 13, 21:PRINT "19. Pemphigus vegetans"
      locate 14, 21:PRINT "20. Condyloma acuminatum"
      locate 15, 21:PRINT "21. Fordyce granules"
      page=2:npages=2
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      elseif ans=73 then
      CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-2, endc-1, scrollines, attrib)
      goto si4
      end if

elseif si=5 then
28840  color highlight, bground
      locate 4, 25:PRINT "Single Bony Lumps or Nodules"
      color normal, bground
      locate , 18:PRINT "1. Torus palatinus (may appear lobulated)"
      locate , 18:PRINT "2. Torus mandibularis"
      locate , 18:PRINT "3. Osteoma/exostosis"
      locate , 16:color astrsk, bground:print "*";:color normal, bground
      locate , 18:PRINT "4. Central expanding bone or odontogenic tumor"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
```

```
      goto softmenu
       end if


elseif si=6 then
28940  color highlight, bground
       locate 4, 14:PRINT "Multiple or Extensive Bony Enlargements or Nodules"

       color normal, bground
       locate 6, 10:PRINT "1.  Torus mandibularis"
       locate 7, 10:PRINT "2.  Torus palatinus (may appear lobulated)"
       locate  , 8:color astrsk, bground:print "*";:color normal, bground
       locate 8, 10:PRINT "3.  Multiple osteomas/Gardner's syndrome"
       locate 9, 10:PRINT "4.  Buccal exostoses"
       locate  , 8:color astrsk, bground:print "*";:color normal, bground
       locate 10, 10:PRINT "5.  Central expanding bone or odontogenic tumor"
       locate 11, 10:PRINT "6.  Fibrous dysplasia"
       locate  , 8:color astrsk, bground:print "*";:color normal, bground
       locate 12, 10:PRINT "7.  Paget's disease of bone"
       locate 13, 10:PRINT "8.  Cherubism"
       locate 14, 10:PRINT "9.  Acromegaly/gigantism"
       locate 15, 10:PRINT "10. Hemifacial hypertrophy"
       locate 16, 10:PRINT "11. Generalized cortical hyperostosis (Van Buchem
disease)"
       page=1:npages=1
       call diffpressret
       if ans=67 then
     goto mainmenu
       elseif ans=68 then
     goto softmenu
       end if

elseif sj=1 then
29110  color highlight, bground
       locate 4, 34:PRINT "Macroglossia"
       color normal, bground
       locate 6, 21:PRINT "1.  Beckwith's hypoglycemic syndrome"
       locate 7, 21:PRINT "2.  Melkersson-Rosenthal syndrome"
       locate 8, 21:PRINT "3.  Multiple mucosal neuromas syndrome"
       locate 9, 21:PRINT "4.  Isolated macroglossia"
       locate 10, 21:PRINT "5.  Amyloidosis"
       locate 11, 21:PRINT "6.  Neurofibromatosis"
       locate 12, 21:PRINT "7.  Acromegaly/cretinism"
       locate 13, 21:PRINT "8.  Pellagra"
```

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locate 14, 21:PRINT "9.  Thiamine (B1) deficiency"
locate 15, 21:PRINT "10. Adult hypothyroidism"
locate 16, 21:PRINT "11. Hemifacial hypertrophy"
locate 17, 21:PRINT "12. Angiomas"
locate 18, 21:PRINT "13. Xerostomia"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 19, 21:PRINT "14. Diabetes mellitus (uncontrolled)"
locate  , 19:color astrsk, bground:print "*";:color normal, bground
locate 20, 21:PRINT "15. Other tumors"
locate 21, 21:PRINT "16. Lymphangioma"
locate 22, 21:PRINT "17. Hemangioma"
page=1:npages=1
call diffpressret
if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  end if



elseif sj=2 then
29340  color highlight, bground
    locate 4, 33:PRINT "Microglossia":color normal, bground
    locate 6, 20:color astrsk, bground:print "*";:color normal, bground
    locate 6, 22:PRiNT "1. Progressive muscular atrophy"
    locate 7, 22:PRINT "2. Oral-facial-digital syndrome"
    locate 8, 22:PRINT "3. Lingual carcinoma, post-surgery"
    page=1:npages=1
    call diffpressret
    if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  end if



elseif sj=3 then
29430  color highlight, bground
    locate 4, 36:PRINT "Clefts"
    color normal, bground
    locate 6, 23:PRINT "1. Idiopathic cleft"
    locate 7, 23:PRINT "2. With cleft palate"
    locate 8, 23:PRINT "3. With median cleft of mandible"
    locate 9, 23:PRINT "4. Oral-facial-digital syndrome"
```

```
    page=1:npages=1
    call diffpressret
    if ans=67 then
 goto mainmenu
    elseif ans=68 then
 goto softmenu
    end if


elseif sj=4 then
29530  color highlight, bground
    locate 4, 31:PRINT "Fissured Tongue"
    color normal, bground
    locate 6, 21:PRINT "1. Inherited"
    locate 7, 21:PRINT "2. Associated with geographic tongue"
    locate 8, 21:PRINT "3. Melkersson-Rosenthal syndrome"
    page=1:npages=1
    call diffpressret
    if ans=67 then
 goto mainmenu
    elseif ans=68 then
 goto softmenu
    end if


elseif sj=5 then
29620  color highlight, bground
    locate 4, 29:PRINT "Supernumerary Tongue"
    color normal, bground
    locate 6, 17:PRINT "1. First and second branchial arch syndrome"
    page=1:npages=1
    call diffpressret
    if ans=67 then
 goto mainmenu
    elseif ans=68 then
 goto softmenu
    end if


elseif sj=6 then
29690  color highlight, bground
    locate 4, 32::PRINT "Smooth Tongue"
    color normal, bground
    locate 6, 11:PRINT "1.  Vitamin B complex deficiency"
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locate 7, 11:PRINT "2.  Pernicious anemia"
locate , 9:color astrsk, bground:print "*";:color normal, bground
locate 8, 11:PRINT "3.  Diabetes mellitus"
locate 9, 11:PRINT "4.  Anxiety with hypertension"
locate , 9:color astrsk, bground:print "*";:color normal, bground
locate 10, 11:PRINT "5.  Cardiac decompensation"
locate , 9:color astrsk, bground:print "*";:color normal, bground
locate 11, 11:PRINT "6.  Plummer-Vinson syndrome"
locate 12, 11:PRINT "7.  Xerostomia"
locate 13, 11:PRINT "8.  Congenital absence of papillae"
locate 14, 11:PRINT "9.  Geographic tongue"
locate 15, 11:PRINT "10. Median rhomboid glossitis"
locate , 9:color astrsk, bground:print "*";:color normal, bground
locate 16, 11:PRINT "11. Epidermolysis bullosa/other vesiculo-bullous
lesions"
locate 17, 11:PRINT "12. Other anemias"
page=1:npages=1
call diffpressret
if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  end if


elseif sj=7 then
29870  color highlight, bground
locate 4, 24:PRINT "Glossodynia (Pain in Tongue)"
color normal, bground
locate 6, 19:PRINT "1.  Vitamin B complex deficiency"
locate 7, 19:PRINT "2.  Pernicious anemia"
locate 8, 19:PRINT "3.  Iron deficiency anemia"
locate 9, 19:PRINT "4.  Diabetes mellitus (uncontrolled)"
locate 10, 19:PRINT "5.  Local irritants/habits"
locate , 17:color astrsk, bground:print "*";:color normal, bground
locate 11, 19:PRINT "6.  Drug reactions"
locate 12, 19:PRINT "7.  Contact allergy"
locate 13, 19:PRINT "8.  Excessive smoking, alcohol, or spices"
locate 14, 19:PRINT "9.  Sjogren's syndrome"
locate 15, 19:PRINT "10. Psychosomatic"
locate 16, 19:PRINT "11. Inflamed lingual tonsil"
locate , 17:color astrsk, bground:print "*";:color normal, bground
locate 17, 19:PRINT "12. Sprue"
locate 18, 19:PRINT "13. Hairy tongue"
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        locate 19, 19:PRINT "14. Decreased intermaxillary space"
        locate 20, 19:PRINT "15. Temporomandibular joint dysfunction"
        locate 21, 19:PRINT "16. Candidiasis"
        page=1:npages=1
        call diffpressret
        if ans=67 then
      goto mainmenu
        elseif ans=68 then
      goto softmenu
        end if


    elseif sk=1 then
    30090  color highlight, bground
        locate 4, 25:PRINT "Acute Parotid-area Swellings"
        color normal, bground
        locate 6, 26:color astrsk, bground:print "*";:color normal, bground
        locate 6, 28:PRINT " 1. Mumps/other parotitis"
        locate , 26:color astrsk, bground:print "*";:color normal, bground
        locate 7, 28:PRINT " 2. Sialolithiasis"
        locate , 26:color astrsk, bground:print "*";:color normal, bground
        locate 8, 28:PRINT " 3. Drug reactions"
        locate , 26:color astrsk, bground:print "*";:color normal, bground
        locate 9, 28:PRINT " 4. Mikulicz's syndrome"
        locate , 26:color astrsk, bground:print "*";:color normal, bground
        locate 10, 28:PRINT " 5. Salivary malignancy"
        page=1:npages=1
        call diffpressret
        if ans=67 then
      goto mainmenu
        elseif ans=68 then
      goto softmenu
        end if


    elseif sk=2 then
    30200  color highlight, bground
        locate 4, 24:PRINT "Chronic Parotid-area Swellings"
        color normal, bground
        locate 6, 22:PRINT "1. Recurrent subacute parotitis"
        locate 7, 22:PRINT "2. Chronic ductal obstruction"
        locate 8, 22:PRINT "3. Benign salivary tumor"
        locate 9, 22:PRINT "4. Sjogren's syndrome"
        locate 10, 22:PRINT "5. Diabetes mellitus"
```

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     locate 11, 22:PRINT "6. Benign lymphoepithelial lesion"
     locate 12, 22:PRINT "7. Chronic alcoholism"
     page=1:npages=1
     call diffpressret
     if ans=67 then
  goto mainmenu
     elseif ans=68 then
  goto softmenu
     end if



elseif sk=3 then
30330  color highlight, bground
     locate 4, 19:PRINT "Acute Discrete Nodules, Non-parotid Area"
     color normal, bground
     locate 6, 21:color astrsk, bground:print "*";:color normal, bground
     locate 6, 23:PRINT "1. Acute lymphadenitis"
     locate , 21:color astrsk, bground:print "*";:color normal, bground
     locate 7, 23:PRINT "2. Infectious mononucleosis"
     locate , 21:color astrsk, bground:print "*";:color normal, bground
     locate 8, 23:PRINT "3. Non-Hodgkins lymphomas"
     locate , 21:color astrsk, bground:print "*";:color normal, bground
     locate 9, 23:PRINT "4. Hodgkin's disease"
     locate , 21:color astrsk, bground:print "*";:color normal, bground
     locate 10, 23:PRINT "5. Sialadenitis (submandibular)"
     locate , 21:color astrsk, bground:print "*";:color normal, bground
     locate 11, 23:PRINT "6. Metastatic tumors"
     page=1:npages=1
     call diffpressret
     if ans=67 then
  goto mainmenu
     elseif ans=68 then
  goto softmenu
     end if



elseif sk=4 then
30450  color highlight, bground
     locate 4, 18:PRINT "Chronic Discrete Nodules, Non-parotid area": color
normal, bground
        locate 6, 18:PRINT "1.  Lipoma"
        locate 7, 18:PRINT "2.  Sebaceous cyst"
        locate 8, 18:PRINT "3.  Branchial cleft cyst"
        locate 9, 18:PRINT "4.  Thyroglossal duct cyst"
```

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locate 10, 18:PRINT "5.  Epidermoid/dermoid cyst"
locate 11, 18:PRINT "6.  Thyroid enlargement"
locate 12, 18:PRINT "7.  Parathyroid enlargement"
locate , 16:color astrsk, bground:print "*";:color normal, bground
locate 13, 18:PRINT "8.  Carotid body tumor"
locate , 16:color astrsk, bground:print "*";:color normal, bground
locate 14, 18:PRINT "9.  Benign salivary tumor (submandibular)"
locate , 16:color astrsk, bground:print "*";:color normal, bground
locate 15, 18:PRINT "10. Tuberculosis"
locate , 16:color astrsk, bground:print "*";:color normal, bground
locate 16, 18:PRINT "11. Sarcoidosis"
locate , 16:color astrsk, bground:print "*";:color normal, bground
locate 17, 18:PRINT "12. Benign mesenchymal tumors"
page=1:npages=1
call diffpressret
if ans=67 then
goto mainmenu
  elseif ans=68 then
goto softmenu
  end if


elseif sk=5 then
30630  color highlight, bground
    locate 4, 13:PRINT "Acute Extensive Diffuse Swellings, Non-parotid
Area"
    color normal, bground
    locate 6, 20:color astrsk, bground:print "*";:color normal, bground
    locate 6, 22:PRINT "1. Cellulitis"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 7, 22:PRINT "2. Ludwig's angina"
    locate 8, 22:PRINT "3. Ranula"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 9, 22:PRINT "4. Sialolithiasis (submandibular)"
    locate 10, 22:PRINT "5. Cat-scratch disease"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 11, 22:PRINT "6. Lymphomas"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 12, 22:PRINT "7. Metastatic tumors"
    locate , 20:color astrsk, bground:print "*";:color normal, bground
    locate 13, 22:PRINT "8. Primary cervical malignancies"
    page=1:npages=1
    call diffpressret
    if ans=67 then
```

```
        goto mainmenu
          elseif ans=68 then
        goto softmenu
          end if


elseif sk=6 then
30770  color highlight, bground
      locate 4, 12:PRINT "Chronic Extensive Diffuse Swellings, Non-parotid
Area"
      color normal, bground
      locate 6, 18:PRINT "1. Sialolithiasis (submandibular)"
      locate , 16:color astrsk, bground:print "*";:color normal, bground
      locate 7, 18:PRINT "2. Benign salivary tumor"
      locate , 16:color astrsk, bground:print "*";:color normal, bground
      locate 8, 18:PRINT "3. Cushing's syndrome (buffalo hump)"
      locate 9, 18:PRINT "4. Benign hereditary cervical lipomatosis"
      page=1:npages=1
      call diffpressret
      if ans=67 then
    goto mainmenu
      elseif ans=68 then
    goto softmenu
      end if
end if
CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrollines, attrib)
      call box (begr, begc, endr, endc)
      locate 25, 1:print space$(80);
      locate 8, 3:PRINT "The preceding differential diagnosis should be of
assistance.  You should be"
      locate 9, 3:PRINT "able to narrow this list considerably by using your
knowledge, impressions, "
      locate 10, 3:PRINT "and other references."
      locate 12, 3:PRINT "Remember, diagnoses in the differential list that
have an asterisk (";
      color astrsk, bground:print "*";
      color normal, bground:print ")";
      locate 13, 3:PRINT "beside them should be investigated as possible
life-threatening or"
      locate 14, 3:PRINT "mission-threatening situations."
      LOCATE 25, 1:print "Press RETURN to continue.";
      x$=input$(1)

goto printdgagain:
```

mainmenu:

REM Clear screen, draw box then go back to main program.

```
CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrolllines, attrib)
call box (begr, begc, endr, endc)
chain "dental"
```

endit:

REM Display last page.

```
CALL SCROLLUP (BEGR+1, BEGC+1, ENDR-1, endc-1, scrolllines, attrib)
locate 5, 10:PRINT "Thank you.  If you have any questions concerning
this program, "
locate 6, 10:print "please contact:"
locate 9, 10:PRINT "Commanding Officer"
locate 10, 10:PRINT "Naval Submarine Medical Research Laboratory"
locate 11, 10:PRINT "Naval Submarine Base New London"
locate 12, 10:PRINT "Groton, Connecticut  06349-5900"
locate 14, 10:PRINT "(203) 449-2523 commercial"
locate 15, 10:PRINT "   8-241-2523 autovon"
locate 23, 1, 1      'turn cursor back on
```

END

Subroutine DIFFPRESSRET
Called from: DIFF
This routine is called from DIFF after "Press RETURN to continue" is
displayed at the bottom of the screen. Along with the RETURN key, it
also allows the user to press F9 for the Main Menu, F10 for the Soft
Tissue Lesions Menu, F7 for Term Definitions, and PgUp and PgDn to view
the different pages of the differential diagnosis.

```
sub diffpressret static
shared page, npages, ans, normal, bground, quescolor

p$=str$(page)
np$=str$(npages)
color quescolor, bground:LOCATE 22, 66:print"(Page";p$;" of";np$;")";
color normal, bground

ans=0
```

```
while ans=0

    getkey1:          ' clear keyboard buffer
    z$=inkey$
    if z$"" then
      goto getkey1
    end if


    getkey2:
    z$=inkey$
    if z$="" then
      goto getkey2
    end if
    if z$=chr$(13) then   '*** RETURN/ENTER
      ans=13
    elseif len(z$)=2 then
      z$=right$(z$, 1)
      if z$=chr$(67) then '*** F9 main menu
        ans=67
      elseif z$=chr$(68)  then '*** F10 sub menu
        ans=68
      elseif z$=chr$(65)  then '*** F7 definitions
        call definitionroutine2
      elseif z$=chr$(73) and page=2 then   '*** PgUp
        ans=73
      elseif z$=chr$(81) then   '*** PgDn
        ans=81
      end if
    end if
  wend
end sub
```

DENTCOMM.BAS

REM common statements used by DENTAL, DIFF, DEFRTNS, *and* DENTSUBS.

COMMON SHARED normal, bground, ssn$, age$, response(), z()

COMMON SHARED mon$, wherefrom$, option$(), opline(),longest, numops

COMMON SHARED qrow, qcol, oprow, opcol, ptrcol, ptr$, ptrcolor, blanks2$

COMMON SHAREDquescolor, ans, mmenu, softmenu, respbar, resplettr, ssnbox

COMMON SHARED realcase, corpresp(), other$

COMMON SHARED dindx(), item$(), disease$(), disindx(), defkeyline, defkeylettr

COMMON SHARED selectlf, def1f, def1s, select2s, select2f, def2f, def2s

WINDCOMM.BAS

REM common statements used by window routines.

COMMON SHARED   /WIND1/ WINDrow(), WINDcol(), WINDheight(), WINDwidth(),
WINDheader$()

COMMON SHARED /WIND2/ WINDscratt(), WINDframatt(), WIND%(), WINDcurrent

COMMON SHARED   /WIND3/ WINDrowptr(), WINDcolptr(), WINDcurrentrow,
WINDcurrentcol

DEFBLD.BAS

```
REM After this prog creates DEF.RND, you must edit the index (DEF.IDX) to
REM take care of the words with slashes. (separate the words and have
REM them both reference the same record. Make sure they stay in alphabetical order.)
REM This version creates a random access file with 60  chars per record.
REM Each definition is terminated with a  "I " (ASCII 124).


dim word$(100),def$(100),dindx(100,2)
open "r",#1,"def.rnd",60
open "def.idx" for output as #2
field#1, 60 as a$
linelimit=60
cls
for x=1 to 73
  read word$(x)
next x
r=1
for x=1 to 73
  read def$(x)
  def$(x)=def$(x)+"."
  linecount=0
  dindx(x,1)=r
    while len(def$(x))  > linelimit
        b=linelimit
        while mid$(def$(x),b,1) <> " "
          b=b-1
        wend
        lset a$=left$(def$(x),b)
        put #1,r
        r=r+1
        def$(x)=space$(5)+right$(def$(x),len(def$(x))-b)
        linecount=linecount+1
    wend
    lset a$=def$(x)
    put #1,r
    r=r+1
    linecount=linecount+1
```

```
          dindx(x,2)=linecount

next x
for x=1 to 73
  print#2,dindx(x,1), dindx(x,2)
  print#2,word$(x)
next x
close
data "Abscess","Acute","Alveolar Bone","Anomaly","Apical"
data "Atrophy","Avulsed","Blunted","Buccal","Bulla","Cellulitis"
data "Chronic","Cleft","Crepitus","Cyst","Dentin","Desquamation"
data "Diffuse","Diplopia","Discrete","Enamel","Endodontic"
data "Enopthalmia","Eroded","Exophytic","Exopthalmia","Fissured"
data "Fluctuant","Generalized","Gingiva","Glossodynia","Hemorrhagic"
data "Hyperplastic","Infraorbital Rim","Intercanthal Distance"
data "Irreversible Pulpitis","Keratotic","Lobulated","Localized"
data "Lingual","Macroglossia","Malaise","Mandibular","Maxillary"
data "Membranous","Microglossia","Mobility","Mucosa","Muscles of Mastication"
data "Myofacial","Necrotic/Necrotizing","Nodules","Occlusion/Occlusal Surface"
data "Papillary","Parotid-area","Periodontal/Periodontic"
data "Periodontitis","Preauricular","Probing Depth","Pulp"
data "Pulpitis","Purulence","Racial Pigmentation","Restoration"
data "Reversible Pulpitis","Sequestrum","Sinusitis","Spontaneous"
data "Supernumerary","Temporomandibular Joint (TMJ)","Ulcers/Ulcerated"
data "Vesicular","Zygomatic arch"
    data "Abscess:  Localized accumulation of purulent material or pus, usually acute"
    data "Acute:  Sharp; having a short and relatively severe course"
    data "Alveolar Bone:  The bone of the mandible or maxilla that supports teeth"
    data "Anomaly:  Deviation from normal"
    data "Apical:  Referring to the apex of a tooth; end of the tooth opposite the crown"
    data "Atrophy:  A wasting away or diminution in the size of the tissue/organ"
    data "Avulsed:  Separated or detached forcibly"
    data "Blunted:  Flattened with loss of scalloped (pointed) shape"
    data "Buccal:  Pertaining to the cheeks or the cheek side"
    data "Bulla:  A large blister or cutaneous vesicle filled with serous fluid"
    data "Cellulitis:  Diffuse, usually subcutaneous spreading inflammation of connective tissue"
    data "Chronic:  Long-standing; not acute"
    data "Cleft:  A longitudinal opening or fissure"
    data "Crepitus:  Cracking or grating sound"
    data "Cyst:  A sac-like structure filled with a liquid or semisolid substance"
    data "Dentin:  The light-yellowish tooth substance that surrounds the pulp and is covered
by enamel"
    data "Desquamation:  The shedding of epithelial elements/cells in scales or sheets (surface
layers of tissue)"
```

data "Diffuse: Not definitely limited or localized"

data "Diplopia: Double vision"

data "Discrete: Separate or distinct"

data "Enamel: The white, hard substance that covers and protects the dentin of the crowns of teeth"

data "Endodontic: Pertaining to the pulp of the tooth"

data "Enopthalmia: Retraction of the eye into the orbit"

data "Eroded: Worn away; destroyed over time"

data "Exophytic: Outwardly growing"

data "Exopthalmia: Abnormal protrusion of the eye"

data "Fissured: Having clefts or grooves"

data "Fluctuant: Having a wave-like motion or the sensation of being fluid-filled"

data "Generalized: Throughout; not localized"

data "Gingiva: Gum tissue; keratinized mucosal tissue that surrounds the necks of the teeth"

data "Glossodynia: Pain in the tongue"

data "Hemorrhagic: Pertaining to or characterized by bleeding"

data "Hyperplastic: Pertaining to an abnormal multiplication or increase in the number of normal cells in normal arrangement in a tissue"

data "Infraorbital Rim: Bony rim palpable just below the eye"

data "Intercanthal Distance: Distance between the medial corners of the eye"

data "Irreversible Pulpitis: A state of pulpal inflammation in which the pulp does not have the potential to return to a state of health"

data "Keratotic: Having a horny/keratinized/somewhat fibrotic nature; usually whitish in appearance; cannot be rubbed-off"

data "Lobulated: Made up of or divided into lobules"

data "Localized: Restricted to a limited region; not generalized"

data "Lingual: Pertaining to the tongue or tongue side"

data "Macroglossia: Enlarged tongue"

data "Malaise: Unlocalized body uneasiness, debility, or discomfort"

data "Mandibular: Pertaining to the lower jaw or mandible"

data "Maxillary: Pertaining to the upper jaw or maxilla"

data "Membranous: Pertaining to a membrane; pertaining to a thin layer of tissue which covers a surface"

data "Microglossia: Under size of the tongue"

data "Mobility: (Dental) pertaining to an increased buccal/lingual (sideways) or vertical movement of the teeth"

data "Mucosa: Mucous membrane; (oral) the tissue lining inside the mouth"

data "Muscles of Mastication: Primarily the masseter, temporalis, medial pterygoid and lateral pterygoid muscles"

data "Myofacial: Referring to muscles of the face"

data "Necrotic/Necrotizing: Having characteristics of necrosis or non-vitality"

data "Nodules: A small boss or node which is solid and detectable by touch"

data "Occlusion/Occlusal Surface: Pertaining to the bite or interdigitation of the teeth; the biting surface"

data "Papillary: Pertaining to or resembling small nipple-shaped projections or elevations"

data "Parotid-area: Pertaining to the area of the parotid salivary gland; anterior and inferior to the ear"

data "Periodontal/Periodontic: Pertaining to the supporting structures of teeth (i.e. gingiva, bone, periodontal ligament, and cementum)"

data "Periodontitis: Inflammation of the supporting structures of the teeth"

data "Preauricular: In front of the ear"

data "Probing Depth: Depth of a periodontal pocket/sulcus measured in mm from the gingival margin to the base of the pocket/sulcus"

data "Pulp: The vascular, nervous, and connective tissue contained within the pulp chamber in the center of the tooth"

data "Pulpitis: Inflammation of the pulp"

data "Purulence: The condition of having or containing pus"

data "Racial Pigmentation: (Dental) normal pigmentation of the mucosa/gingiva; characterized by a diffuse generalized appearance; more commonly found in dark-skinned persons"

data "Restoration: A dental filling"

data "Reversible Pulpitis: A state of pulpal inflammation in which the pulp has the potential to return to a state of health"

data "Sequestrum: That which is sequestered or given off; often refers to a small fragment of non-vital bone"

data "Sinusitis: Inflammation of a sinus or sinuses"

data "Spontaneous: Occurring for no particular reason or stimulus"

data "Supernumerary: Extra; above the normal number"

data "Temporomandibular Joint (TMJ): The joint(s) which connects the mandible to the temporal bone"

data "Ulcers/Ulcerated: A loss of substance on a cutaneous or mucous surface causing gradual disintegration and necrosis of the tissues"

data "Vesicular: Pertaining to small blisters or serous-filled elevations"

data "Zygomatic arch: The bony arch formed by zygomatic bone (malar/cheek bone)"

DISDFBLD.BAS

REM This prog creates DISDEF.IDX, DISDEF.RND FROM DXDEF.TXT.

```
dim def$(100),dindx(100,2),word$(100)
open "r",#1,"disdef.rnd",60
open "disdef.idx" for output as #2
open "dxdef.txt" for input as #3
field#1, 60 as a$
linelimit=60
cls
r=1:linecount=0:wordcount=0
while not eof(3)
  line input #3, txt$
  txt$=left$(txt$,linelimit)
  print txt$
  wordcount=wordcount+1
  dindx(wordcount,1)=r
  b=instr(txt$,":")
  b=b-1         'get rid of :
  word$(wordcount)=left$(txt$,b)
  while txt$  "~~"
    lset a$=txt$
    put #1,r
    r=r+1
    linecount=linecount+1
    line input #3, txt$
    txt$=left$(txt$,linelimit)
    print txt$
  wend
  dindx(wordcount,2)=linecount
  linecount=0
wend
print wordcount
for x=1 to wordcount
  print#2,dindx(x,1), dindx(x,2)
  print word$(x)
```

```
  print#2,word$(x)
next x
close
```

TREATBLD.BAS

REM Read a text file (trtmts.txt) and create an index of the first record num for each treatment plan.

```
20 NM = 35
25  OPEN "R",#1,"trtmts.rnd",75
30  FIELD #1,75 AS A$
   open "trtmts.txt" for input as #2
   r=1
35  FOR I = 0 TO NM
   print "treat#";i;" rec#";r
   par$=""

45  line input #2, TX$
   if tx$="~~" then 60
   par$=par$+tx$+" "
   goto 45
60 REM break up lines
   limit=75
   while len(par$)limit
     b=limit+1
     while mid$(par$,b,1) <> " "
         b=b-1
     wend
     lset a$=left$(par$,b)
     print a$
     put #1
     r=r+1
     par$=right$(par$,len(par$)-b)
   wend
   lset a$=par$
     print a$
   put#1
   r=r+1
   lset a$="|"
   put#1
   r=r+1
```

```
input rt$
65  NEXT I
70 CLOSE#1
```

DEF.TXT

Abscess: Localized accumulation of purulent material or pus, usually acute

Acute: Sharp; having a short and relatively severe course

Alveolar Bone: The bone of the mandible or maxilla that supports teeth

Anomaly: Deviation from normal

Apical: Referring to the apex of a tooth; end of the tooth opposite the crown

Atrophy: A wasting away or diminution in the size of the tissue/organ

Avulsed: Separated or detached forcibly

Blunted: Flattened with loss of scalloped (pointed) shape

Buccal: Pertaining to the cheeks or the cheek side

Bulla: A large blister or cutaneous vesicle filled with serous fluid

Cellulitis: Diffuse, usually subcutaneous spreading inflammation of connective tissue

Chronic: Long-standing; not acute

Cleft: A longitudinal opening or fissure

Crepitus: Cracking or grating sound

Cyst: A sac-like structure filled with a liquid or semisolid substance

Dentin: The light-yellowish tooth substance that surrounds the pulp and is covered by enamel

Desquamation: The shedding of epithelial elements/cells in scales or sheets (surface layers of tissue)

Diffuse: Not definitely limited or localized

Diplopia: Double vision

Discrete: Separate or distinct

Enamel: The white, hard substance that covers and protects the dentin of the crowns of teeth

Endodontic: Pertaining to the pulp of the tooth

Enopthalmia: Retraction of the eye into the orbit

Eroded: Worn away; destroyed over time

Exophytic: Outwardly growing

Exopthalmia: Abnormal protrusion of the eye

Fissured: Having clefts or grooves

Fluctuant: Having a wave-like motion or the sensation of being fluid-filled

Generalized: Throughout; not localized

Gingiva: Gum tissue; keratinized mucosal tissue that surrounds the necks of the teeth

Glossodynia: Pain in the tongue

Hemorrhagic: Pertaining to or characterized by bleeding

Hyperplastic: Pertaining to an abnormal multiplication or increase in the number of normal cells in normal arrangement in a tissue

Infraorbital Rim: Bony rim palpable just below the eye

Intercanthal Distance: Distance between the medial corners of the eye

Irreversible Pulpitis: A state of pulpal inflammation in which the pulp does not have the potential to return to a state of health

Keratotic: Having a horny/keratinized/somewhat fibrotic nature; usually whitish in appearance; cannot be rubbed-off

Lobulated: Made up of or divided into lobules

Localized: Restricted to a limited region; not generalized

Lingual: Pertaining to the tongue or tongue side

Macroglossia: Enlarged tongue

Malaise: Unlocalized body uneasiness, debility, or discomfort

Mandibular: Pertaining to the lower jaw or mandible

Maxillary: Pertaining to the upper jaw or maxilla

Membranous: Pertaining to a membrane; pertaining to a thin layer of tissue which covers a surface

Microglossia: Under size of the tongue

Mobility: (Dental) pertaining to an increased buccal/lingual (sideways) or vertical movement of the teeth

Mucosa: Mucous membrane; (oral) the tissue lining inside the mouth

Muscles of Mastication: Primarily the masseter, temporalis, medial pterygoid and lateral pterygoid muscles

Myofacial: Referring to muscles of the face

Necrotic/Necrotizing: Having characteristics of necrosis or non-vitality

Nodules: A small boss or node which is solid and detectable by touch

Occlusion/Occlusal Surface: Pertaining to the bite or interdigitation of the teeth; the biting surface

Papillary: Pertaining to or resembling small nipple-shaped projections or elevations

Parotid-area: Pertaining to the area of the parotid salivary gland; anterior and inferior to the ear

Periodontal/Periodontic: Pertaining to the supporting structures of teeth (i.e. gingiva, bone, periodontal ligament, and cementum)

Periodontitis: Inflammation of the supporting structures of the teeth

Preauricular: In front of the ear

Probing Depth: Depth of a periodontal pocket/sulcus measured in mm from the gingival margin to the base of the pocket/sulcus

Pulp: The vascular, nervous, and connective tissue contained within the pulp chamber in the center of the tooth

Pulpitis: Inflammation of the pulp

Purulence: The condition of having or containing pus

Racial Pigmentation: (Dental) normal pigmentation of the mucosa/gingiva; characterized by a diffuse generalized appearance; more commonly found in dark-skinned persons

Restoration: A dental filling

Reversible Pulpitis: A state of pulpal inflammation in which the pulp has the potential to return to a state of health

Sequestrum: That which is sequestered or given off; often refers to a small fragment of non-vital bone

Sinusitis: Inflammation of a sinus or sinuses

Spontaneous: Occurring for no particular reason or stimulus

Supernumerary: Extra; above the normal number

Temporomandibular Joint (TMJ): The joint(s) which connects the mandible to the temporal bone

Ulcers/Ulcerated: A loss of substance on a cutaneous or mucous surface causing gradual disintegration and necrosis of the tissues

Vesicular: Pertaining to small blisters or serous-filled elevations

Zygomatic arch: The bony arch formed by zygomatic bone (malar/cheek bone)

DEF.IDX

1	2
Abscess	
3	1
Acute	
4	2
Alveolar Bone	
6	1
Anomaly	
7	2
Apical	
9	2
Atrophy	
11	1
Avulsed	
12	1
Blunted	
13	1
Buccal	
14	2
Bulla	
16	2
Cellulitis	
18	1
Chronic	
19	1
Cleft	
20	1
Crepitus	
21	2
Cyst	
23	2
Dentin	
25	2
Desquamation	
27	1
Diffuse	
28	1
Diplopia	
29	1
Discrete	
30	2
Enamel	

32   1
Endodontic
33   1
Enopthalmia
34   1
Eroded
35   1
Exophytic
36   1
Exopthalmia
37   1
Fissured
38   2
Fluctuant
40   1
Generalized
41   2
Gingiva
43   1
Glossodynia
44   1
Hemorrhagic
45   3
Hyperplastic
48   1
Infraorbital Rim
49   2
Intercanthal Distance
51   3
Irreversible Pulpitis
54   3
Keratotic
57   1
Lobulated
58   1
Localized
59   1
Lingual
60   1
Macroglossia
61   2
Malaise
63   1
Mandibular
64   1
Maxillary
65   2

Membranous
67   1
Microglossia
68   3
Mobility
71   2
Mucosa
73   3
Muscles of Mastication
76   1
Myofacial
77   2
Necrotic
77   2
Necrotizing
79   2
Nodules
81   2
Occlusal Surface
81   2
Occlusion
83   2
Papillary
85   2
Parotid-area
87   3
Periodontal
87   3
Periodontic
90   2
Periodontitis
92   1
Preauricular
93   3
Probing Depth
96   3
Pulp
99   1
Pulpitis
100   1
Purulence
101   4
Racial Pigmentation
105   1
Restoration
106   3
Reversible Pulpitis

DISDEF.TXT

Abscess/Infection/Cellulitis: As used in this program,
this is a catch-all category. With any of the three areas,
many of the classic signs of an infection are usually
present and may include any or all of the following:
swelling, redness, pus formation, elevated temperature, and
malaise. An abscess is a localized accumulation of pus and
may vary in size. An abscess may develop into a cellulitis
which is a diffuse, usually subcutaneous spreading of
inflammation which may become life-threatening.
~~

Acute Apical Abscess: An advanced exudative and profoundly
symptomatic inflammatory response of the periapical
connective tissues. It is caused by contaminants from the
pulp canal that produce a steadily increasing amount of
inflammatory exudate (edema) and later, pus.
Radiographically the apical area of the tooth may appear
normal. Pus often drains through the alveolar bone forming
a clinically fluctuant swelling, often on the mucosa
overlying the apex of the involved tooth. Some relief of
pain is often experienced upon rupture or drainage of the
abscess.
~~

Acute Apical Periodontitis: The initial exudative and
moderately symptomatic inflammatory reaction of the
periapical connective tissues. It is usually caused by
contaminants from the pulp canal which produce exudation in
the periapical area, however, a milder form of acute apical
periodontitis, unrelated to pulpal disease, can occur from
occlusal trauma. There is no swelling but the tooth is
tender to percussion. When caused by pulpal disease, this
condition usually progresses to an acute apical abscess.
~~

Acute Gingivitis: Acute inflammation of the gingiva
characterized by red, painful, bleeding gingival tissues.
~~

Acute Herpetic Gingivostomatitis: An acute viral disease
characterized by multiple vesicle formation and gingival
inflammation. The vesicles may form on most areas of the
mouth, as opposed to aphthous ulcers (canker sores) which

form on non-keratinized tissue and are usually single in number. The vesicles are not usually seen as they rupture early and form whitish ulcers, each surrounded by a reddish halo. In its primary form, the condition is often quite painful and the patient may complain of a sore mouth. The patient may have an elevated temperature, malaise, and lymph node involvement. Because of the sore mouth, fluid intake needs to be maintained to avoid dehydration. In a recurrent form, small ulcers/sores are often found on the lateral areas of the palate, near the bicuspids and molars.

~~

Carious Lesion (Decay): A microbial disease of the calcified tissues of the teeth, characterized by demineralization of the inorganic portion and destruction of the organic substance of the tooth. Clinically, it varies in color from orange to brown but is always soft and can be penetrated by a sharp instrument such as a dental explorer. Untreated, a carious lesion can progress to involve the pulp of the tooth and lead to pulpitis, acute apical periodontitis, and acute apical abscess. Sensitivity to sweets/sugar may suggest a carious lesion.

~~

Defective Restoration: Imperfections, fractures, open margins or other undesirable attributes in dental restorations (ex. fillings, crowns, etc.) which are conducive to the development of dental caries. This in turn may lead to pulpal death and endodontic problems. A dental explorer placed in the restoration/tooth interface may detect the softer carious tooth structure.

~~

Dentin Hypersensitivity: Excessive sensitivity of dentin, which is the light yellowish calcific tissue underlying the cementum or enamel that forms the body of a tooth. Clinically, dentin hypersensitivity usually occurs near the gingival margin. Dentin is often exposed near the gingival margin from gingival recession or from toothbrush abrasion of the relatively thin enamel layer in this area. The sensitivity is usually to cold, but may be to touch and hot as well. The sensitivity does not linger after the stimulus is removed.

~~

Displacement/Mobility of Tooth, Favorable Prognosis: As a result of trauma, the prognosis for a displaced or mobile tooth is favorable when only relatively minor displacement or mobility of the tooth exists, the tooth was otherwise healthy prior to the trauma, and no other compromising conditions exist such as an alveolar fracture.

~~

Displacement/Mobility of Tooth, Guarded Prognosis: As a
result of trauma, the prognosis for a displaced or mobile
tooth is guarded when the tooth is extremely mobile or was
not otherwise healthy before the trauma or an alveolar
fracture is present.

~~

Enamel Fracture: This condition occurs when the crown of
the tooth has been traumatized and the damage is confined
strictly to the enamel. Although the tooth may be
sensitive, this condition is of relatively minor
importance.

~~

Endodontic/Periodontic Combined Problem: In this situation
both periodontal and endodontic etiologies exists. In
order for healing to occur both root canal treatment and
periodontal therapy are necessary.

~~

Food Impaction: Forceful wedging of food between the
teeth. Gingival tissues in an area of food impaction are
usually red and bleed easily, and may be painful. A foul
odor may be present.

~~

Fractured Alveolar Bone: A fracture of the alveolar
process which may or may not involve the alveolar
socket. Commonly located in the anterior area, they can
also affect other areas. The fracture line may be apical
to the apices (ends) of the teeth, but in most cases
involves the alveolar socket. In these cases associated
dental injuries such as extrusive or lateral luxations and
root fractures are common findings. Fractures of the
alveolar process can usually be diagnosed by finding
displacement and mobility of the fragment. Approximately
75% of teeth in the line of an alveolar fracture become
devitalized and, if not extracted or treated with
endodontics, can result in endodontically-related
emergencies.

~~

Fractured Crown, Large Pulp Exposure: A tooth that is
fractured with its pulp exposed with a size greater than 1
mm in diameter is considered, for purposes of this program,
to be a fractured crown with a large pulp exposure. A
large pulp exposure cannot usually be treated
predictably to retain pulp vitality and endodontic
treatment (root canal) is usually ultimately necessary.

~~

Fractured Crown, Pulp Not Exposed: This condition occurs
when the crown of a tooth has been fractured exposing the
dentin but not the pulp. Depending on the extent of the
fracture, the tooth may be quite sensitive. Prolonged
exposure of the dentin may result in pulpal death depending
in part on the proximity of the fracture line to the pulp.

~~

Fractured Crown, Small Pulp Exposure: A tooth that is
fractured with its pulp exposed with a size less than 1 mm
in diameter is considered, for purposes of this program, to
be a fractured crown with a small pulp exposure. When a
small pulp exposure is properly treated, pulpal vitality
may be retained.

~~

Fractured Mandible: Mandibular fractures are classified
into various types, depending on the location of the
fracture and whether or not the fracture is simple,
compound, or comminuted. The incidence of fractures by
sites is approximately as follows: angle 31%, condyle 18%,
molar region 15%, mental region 14%, symphysis 8%, cuspid
7%, ramus 6% and coronoid process 1%.

~~

Fractured Maxilla/Fractured Facial Bones: Maxillary/facial
fractures are serious injuries because they involve
important anatomical structures. The nasal cavity,
maxillary antrum, orbit, and brain may be involved
primarily by trauma or secondarily by infection. Cranial
nerves, major blood vessels, vascular areas, thin bony
walls, multiple muscular attachments, and specialized
epithelia characterize this region in which injury can
result in serious and life-threatening sequelae. There are
multiple types of fractures that can occur in this area.

~~

Internal Derangement of the Temporomandibular Joint: A
broad category which includes any internal malrelationship
of the temporomandibular joint, the articular disk, and
associated structures. A malposed/diseased/degenerated
articular disk may result in clicking, popping, or locking
of the joint. Pain is usually in or around the joint and
usually increases during mastication. This condition may
be associated with myofascial pain/muscle spasms.

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Irreversible Pulpitis: A condition of the pulp in which
there are painful episodes which are spontaneous and

continuous and often aggravated by heat or cold. The patient may have had a previous history of pain in the same tooth.

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Localized Alveolar Osteitis (Dry Socket): A breakdown or improper formation of the blot clot that normally forms in an extraction site and which is necessary for healing. It most commonly develops on the third or fourth day after extraction and in conjunction with the extraction of a lower wisdom tooth. It is characterized by continuous pain in the general extraction site area which may radiate to the ear. A necrotic odor is frequently present. Irrigation with sterile saline and eugenol/iodoform gauze dressings are used to treat the condition.

~~~

Maxillary Sinusitis: Inflammation of the maxillary sinus, the bony cavity in the body of the maxilla, superior to the alveolar process, lateral to the nasal cavity, and communicating with the middle meatus of the nose. Symptoms include percussion sensitivity of the maxillary bicuspid and molar teeth, often generalized rather than to a specific tooth. The pain usually increases when the position of the head is rapidly changed, such as lowering it. The patient usually reports having a recent cold or sinus problem.

~~~

Myofascial Pain/Muscle Spasms: Discomfort or pain associated with the muscles of mastication and related to the temporomandibular joint. For treatment purposes, muscles may be viewed as being in a spastic state. This condition is often related to stress, habits, or occlusal malrelationships and patients need to be carefully questioned and examined. Parafunctional habits may include grinding or clenching of the teeth or gum chewing; pain related to night grinding is often more intense in the morning after waking up. Treatment is directed at reducing stress, physical therapy, and correcting habits. The occlusion can be addressed by a dentist. Bite splints are prosthetic devices often used by dentists to, among other things, deprogram the muscles and help them "relax." This condition may be associated with an internal derangement of the joint(s).

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Necrotizing Ulcerative Gingivitis: An acute gingival infection characterized by an extremely foul oral odor; bleeding, painful gingiva; development of a white, easily removable pseudomembrane over the gingival tissues; and

blunting of the interdental papillae (the tissue between
the teeth). Malaise, elevated temperature, and lymph node
involvement may be present. This condition is also called
trenchmouth, Vincent's infection, and NUG and ANUG.

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Neurologic Injury: Within the context of this program,
after trauma to the head, the following usually indicate a
neurologic injury: 1) loss of consciousness, 2) vomiting,
or 3) amnesia.

~~~

Occlusal Trauma: An abnormal occlusal force on a tooth,
often resulting from a malocclusion or an improper (ex.
"high") restoration. The involved tooth/teeth often feel
sore and have an increased mobility. When the supporting
structures of the teeth have been lost, for example bone
and attachment loss from periodontal disease, then even
normal occlusal forces acting on a compromised periodontium
may act with traumatic results.

~~~

Osseous Sequestrum: During extraction of a tooth, small
fragments of bone may be fractured from the socket. These
pieces of bone may become non-vital and work their way to
the surface of the tissue one to two months after the
extraction until they are sequestered.

~~~

Pericoronitis/Erupting Tooth: Pericoronitis is
classically an acute, painful inflammation of the tissues
overlying a partially erupted lower third molar (wisdom
tooth). The third molar may only appear on radiographs.
Typical symptoms may include lymphadenopathy, trismus, pain
in the region of the third molar, malaise, and elevated
temperature. These symptoms may vary from mild to severe
pain. The patient may develop a cellulitis capable of
producing difficulty in swallowing, and the patient can
have extreme tenderness to palpation extraorally and
intraorally and edema visible in the submandibular and
pharyngeal regions. Untreated, respiratory compromise
and/or progression of the infection to the mediastinum may
result.

~~~

Periodontal Abscess: A localized area of pus formation
originating from inflammation in the periodontal pocket or
space and manifesting as a swelling on the gingival (gum)
tissues. Periodontal abscesses rarely progress to a
cellulitis and, although they may be uncomfortable, are
somewhat self-limiting.

~~~

Reversible Pulpitis: A condition of the pulp in which there are painful episodes of short duration initiated by an external stimulus (ex. touch, cold, heat). A history of recent dental procedures (ex. new filling, root planing), a faulty restoration, or cervical erosion may help establish this as a possible diagnosis.

~~~

Root Fracture: Total or partial separation of an otherwise intact root. Fractures can be obvious or hairline and can be in horizontal or vertical directions. Although it depends on the direction, location on the root, and the extent of the fracture, the prognosis for teeth with root fractures is usually extremely guarded. Extraction of the teeth is often the ultimate sequelae.

~~~

Total Avulsion of Tooth, Good Candidate for Replantation: A tooth that is a good candidate for replantation is one that 1) was otherwise healthy before being avulsed; 2) has been avulsed for less than 3 hours; 3) is generally intact; and 4) has an intact socket into which to reimplant the tooth. It is best if the tooth is not allowed to dehydrate before reimplanting.

~~~

Total Avulsion of Tooth, Poor Candidate for Replantation: A tooth that is a poor candidate for replantation is one in which any of the following conditions have been met: 1) the tooth has been avulsed for longer than 3 hours; 2) the tooth is not intact; or 3) the socket to which the tooth should be reimplanted is not intact. In some cases, if the tooth was not healthy before being avulsed or was allowed to dehydrate, it is not usually a good candidate for replantation.

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Acute Apical Periodontitis
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Total Avulsion of Tooth, Good Candidate for Replantation
261   9
Total Avulsion of Tooth, Poor Candidate for Replantation

TRTMTS.TXT

Please carefully review your information and repeat the program. If a
diagnosis cannot be made after repeated attempts try using a related
area on the menus (ex. try No. 1 "Tooth, Specific" on the Not Trauma-related
Menu if a specific diagnosis was not obtained by using No. 2 "Teeth Generalized or
Multiple Adjacent." Remember, the diagnostic outcomes produced by this program
can be highly influenced by the answer of only one question. Read and answer
each question carefully.

As a last resort try using the Soft Tissue Lesions Section of the program
(No. 3 on the Main Menu) for a differential diagnosis.
~~

Localized Alveolar Osteitis -- Irrigate the socket with sterile saline. The
extraction site should then be packed with a single 2 inch piece of 1/8 inch
iodoform gauze to which a drop of eugenol has been added. Gently insert the
gauze to the full depth of the site. Pack loosely. A dramatic decrease in
symptoms should occur within 10 minutes. Replace eugenol/gauze pack every
day for about a week. Remove the pack permanently after 2 weeks. Hot
saline rinses and analgesics may provide additional relief during the 2 week
treatment period.
~~

Osseous Sequestrum -- Treatment is generally palliative until such time as the
sequestrum can be removed atraumatically with instruments or is exfoliated on
its own. Hot saline rinses with analgesics and avoidance of the area by the
patient when eating will help. If the sequestrum is not exposed, a few drops of
local anesthetic can be deposited in the area and an attempt can be made to
crush the spicule through the tissue using a blunt instrument. Observe the
area closely and monitor for possible infection. A usually short-lived soft
tissue defect may develop. Antibiotics are not usually indicated.
~~

Abscess/Infection/Cellulitis -- Maintain vital signs/airway. Correct the cause
if possible. Establish drainage if purulence is suggested and if feasible,
considering anatomic structures and individual abilities. Perform culture
and sensitivity tests if possible. Administer antibiotics (penicillin is the drug of
choice if not otherwise contraindicated). Use sedatives/analgesics cautiously as they
can compromise respirations. Maintain hydration and nutrition. If a dental etiology

is suspected review recommendations for periodontal and periapical abscesses. If the patient does not respond MEDEVAC in prone/lateral prone position to help maintain the airway. These patients can become very sick; do not hesitate to MEDEVAC.

~~

Periodontal Abscess -- Treatment consists primarily of establishing drainage through the gingival sulcus, if possible, using a periodontal curette or probe. If this is not possible, conservative I & D can be attempted by applying topical anesthetic and making a small (2-3 mm) shallow incision at the height of the fluctuant swelling. After the incision is made, explore the abscess area for purulence using a blunt instrument. Avoid surgical I & D on the lingual surfaces of the lower teeth as there are many important anatomical considerations. Hot saline rinses and analgesics will help. Antibiotics are not usually indicated. Refer the patient for a periodontal consult at the earliest convenience.

~~

Reversible Pulpitis -- Treatment consists of removal of the pain stimulus and/or protection of the tooth from the stimulus. In this case the stimulus may be transient thermal sensitivity. Sometimes only counseling is needed. Local anesthesia/analgesics may be necessary. If caries are present, anesthetize the area and isolate the tooth with 2 x 2 gauze and remove the caries until either discomfort is felt or hard tooth structure is encountered. Mix and place a zinc oxide and eugenol restoration. If a restoration cannot be placed, monitor the tooth for development of irreversible pulpitis. Antibiotics are not necessary. Refer the patient for definitive dental treatment at the earliest convenience.

~~

Irreversible Pulpitis -- If the tooth has caries, anesthetize and isolate the tooth with 2 x 2 gauze. Remove the caries until the pulp is exposed 1 mm or more then place a cotton pellet which has been lightly moistened with formocresol to the deepest part of the cavity. Mix a zinc oxide and eugenol restoration and place it to cover the cotton pellet. Use analgesics. After 3-6 hours continue to monitor closely if the situation improves. If not repeat above procedures and try to remove more caries or pulp tissue. If unable use analgesics and arrange for definitive care ASAP. Antibiotics are usually not needed. MEDEVAC of the patient may be necessary. Refer the patient for endodontic evaluation ASAP.

~~

Acute Apical Abscess -- If caries are present anesthetize and isolate the tooth with 2 x 2 gauze. Remove caries and pulp contents with spoon excavators to establish drainage through the crown of the tooth. Administer antibiotics (penicillin is the drug of choice if not otherwise contraindicated). If a fluctuant swelling is present apply topical anesthetic and I & D with a No. 12 blade by using a small (2-3 mm) shallow incision. Use hot saline rinses and analgesics. If you are unable to remove the caries/restoration and, therefore, unable to establish drainage through the tooth then only I & D the abscess. Refer the patient for definitive endodontic evaluation ASAP. MEDEVAC of the patient may be necessary if the situation does not respond.

Acute Apical Periodontitis -- If you are able, vitality tests should be performed.
If the tooth is vital then check the occlusion and relieve if able. If the
tooth is non-vital and has caries, anesthetize and isolate the tooth
with 2 x 2 gauze. Remove the caries with spoon excavators and expose the pulp.
Place a cotton pellet lightly moistened with formocresol to the deepest part of
the cavity. Mix a zinc oxide and eugenol restoration and place it over the
cotton pellet. If the tooth is non-vital and the caries cannot be removed then
use antibiotics and analgesics and monitor closely. This situation can progress
to an acute apical abscess. Refer for endodontic evaluation ASAP. MEDEVAC of
the patient may be necessary.
~~

Carious Lesion (Decay) -- If the tooth is vital anesthetize and isolate the tooth
with 2 x 2 gauze. Remove the caries with a spoon excavator until hard tooth
structure is encountered. If a small pulp exposure (mm) is present, place a
calcium hydroxide base. If a large exposure is present, remove as much pulp as
possible and place a cotton pellet lightly moistened with formocresol over the
pulp exposure. Mix and place a zinc oxide and eugenol restoration over the
cotton pellet or hard tooth structure if no exposure was present. If the tooth
is non-vital then follow recommendations for irreversible pulpitis. If
you are unable to remove the caries then use analgesics. Symptomatic carious
lesions usually imply that, at the very least, a pulpitis is present. This
condition may progress to apical periodontitis or an apical abscess. Monitor
closely and refer for definitive care ASAP.
~~

Dentin Hypersensitivity -- Treatment consists of removal of the pain stimulus and
treating the dentin to make it less responsive to the stimulus. Counsel the
patient to avoid hot and cold foods or liquids in the area. The patient should
temporarily avoid highly acidic foods such as oranges or pineapples as these
may aggravate the condition. Recommend a desensitizing toothpaste to the patient
and follow the manufacturer's instructions. If this is not available have
the patient use a bland toothpaste and avoid super-whitening brands. Refer for
definitive dental treatment when possible. Mild analgesics such as aspirin or
acetaminophen may help.
~~

Maxillary Sinusitis -- To corroborate the diagnosis take sinus series radiographs
if you are able and palpate and percuss the sinus areas for sensitivity. The
patient may complain of frontal headache pain or a sensation of supererupted
dentition. Question the patient further about previous colds or sinus problems.
A seropurluent or mucopurulent exudate may be present. Place the patient on
decongestants. Place the patient on antibiotics if an exudate or fever or
lymphadenopathy are evident (ampicillin is the drug of choice if not otherwise
contraindicated). Monitor the patient closely. If radiographs reveal other
pathological conditions, follow-up is required. MEDEVAC may be necessary if
the condition is unresponsive.

Endodontic/Periodontic Combined Problem -- This exists when there are both endodontic and periodontal etiologies for the abscess. Review the treatment recommendations for both the periodontal abscess and the acute apical (endodontic) abscess. The endodontic component of the problem is the more likely source of the discomfort and should usually be treated first. Treat the problem as if it were an acute apical abscess with the exception of additionally trying to curette the periodontal pockets to remove any calculus or debris. Use antibiotics (penicillin is the drug of choice if not otherwise contraindicated) and analgesics. Monitor closely. MEDEVAC of the patient may be necessary. Refer for endodontic and periodontic evaluation ASAP.
~~

Defective Restoration -- If caries are present, review treatment recommendations for carious lesions. If the restoration has become displaced or fractured or a part has been lost then protect the dentin if it is exposed to make it less responsive to painful stimuli. Isolate the tooth with 2 x 2 gauze. If a pulp exposure exists, review the treatments recommendations for small (1 mm) or large (1 mm) pulp exposures. If no pulp exposure is present then mix and place a zinc oxide and eugenol restoration. If this is not possible then use analgesics and observe closely. Local anesthesia is not usually required. Refer the patient for definitive dental care ASAP. MEDEVAC of the patient may be necessary.
~~

Acute Herpetic Gingivostomatitis -- Treatment is generally palliative. As a primary condition vesicles and gray/white ulcers surrounded by a red halo can be found throughout the mouth. Adjacent gingival tissues are usually inflamed. Oral hygiene instructions should be given. Insure an adequate fluid intake by the patient. Analgesics are recommended. In severe cases rinses of viscous lidocaine or diphenhydramine elixir can be used. Antibiotics are only necessary if a secondary bacterial infection is suspected. The condition should resolve within 2 weeks. A more innocuous recurrent form of this condition may occur and it is commonly seen on lateral areas of the palate. The classic ulcers are not usually seen in the recurrent form. Rather you might see small vesicles or eroded areas. This condition is treated similarly to the primary condition although it is far less severe. If only one or two painful classic ulcers are noted on the oral mucosa then a diagnosis of apthous ulcer(s) should be considered. There generally will not be any systemic involvement (i.e. fever or lymph nodes, etc.). Aphthous uclers resolve spontaneously in 1-2 weeks.
~~

Pericoronitis/Erupting Tooth -- Have the patient rinse with hot saline 4-6 times a day for a week or so. If an inflamed flap of tissue is present (pericoronitis) then debride the area under flap with a periodontal curette and follow with daily irrigation using sterile saline and a blunt irrigation needle. Pericoronitis can be a serious problem and antibiotics should be considered early in treatment. If the patient has fever/chills/lymphadenopathy/malaise, definitely give antibiotics, usually penicillin IV (8 million units per day) if not otherwise contraindicated. If the patient does not stabilize within 12-24 hours then MEDEVAC. Use analgesics as needed. Monitor and observe closely.

For an erupting tooth the situation is usually self-limiting if an infection or severly inflamed tissue is not present. Treat this condition with analgesics. Refer the patient for an oral surgery evaluation ASAP.

~~

Necrotizing Ulcerative Gingivitis -- Give the patient thorough oral hygiene instructions and have the patient demonstrate plaque removal to you daily if necessary. This is mandatory! The patient will bleed when brushing. Debride the patient's mouth initially using curettes or a toothbrush or wet cotton balls or combination of these. Start the patient on 3% hydrogen peroxide rinses 4-6 times a day for a week. If the patient has fever/lymphadenopathy/malaise then give penicillin V-K 500 mg q6h for 7-10 days if not otherwise contraindicated. Analgesics are helpful. The patient should promptly improve but needs close follow-up. The bleeding of the gingival tissues may continue until more definitive care can be provided. Refer the patient for a periodontal evaluation ASAP. MEDEVAC of the patient may be necessary.

~~

Acute Gingivitis -- Give the patient thorough oral hygiene instructions and have the patient demonstrate brushing and flossing to you daily if necessary. Hot saline rinses and analgesics will also help. Under conditions of strict plaque removal, the acute stage should resolve within 1-2 weeks. If not, check the Soft Tissue Lesions Section of this program for other possibilities such as a blood dyscrasia or acute herpetic gingivostomatitis or allergy or some other systemic condition. Antibiotics are not usually indicated. Refer the patient for a periodontal evaluation ASAP. MEDEVAC is not usually necessary.

~~

Food Impaction -- Using a periodontal curette or probe or explorer, attempt to remove the impacted food debris. It is usually caught between the teeth and can be difficult to notice because of the facial and lingual gingival papillae. Once the debris is removed give the patient oral hygiene instructions with emphasis on flossing. Have the patient rinse with hot saline 4-6 times a day for a week or so. If all food debris is not removed there is the potential to develop a periodontal abscess or localized infection. Have the patient avoid chewing fibrous foods/meats until the acute condition is resolved. Refer the patient for definitive dental care ASAP. MEDEVAC is not usually necessary.

~~

Myofascial Pain/Muscle Spasms -- Immediate care consists of: 1) analgesics asprin/acetaminophen/ibuprofen); 2) soft diet or liquid diet (if the patient has difficulty opening); 3) hot moist packs 4-6 times a day applied to the muscles of mastication (primarily masseter/temporomandibular joint/temporal areas); and 4) muscle relaxants (ex. diazepam PO). If the patient has severe trismus consider iM diazepam 5-15 mg. Eliminate or reduce any aggravating habits such as gum chewing/clenching/bruxism. Counsel the patient to reduce stress and anxiety which are often associated with the problem. Refer the patient for definitive dental evaluation when practical. MEDEVAC is not usually necessary.

~~

Internal Derangement of the TMJ -- If you are able take a screening radiograph to rule out obvious pathosis. Immediate treatment consists of: 1) analgesics (aspirin/acetaminophen/ibuprofen); 2) soft diet (if the patient feels pressure in his joint when eating the diet is probably not soft enough); 3) hot moist packs to the joint area 4-6 times a day; 4) have the patient limit the range of motion of their mandible (do not have the patient open more than absolutely necessary when speaking/eating/yawning); 5) eliminate or reduce any aggravating habits such as chewing gum/clenching/bruxism; 6) counsel patient to decrease stress; and 7) use muscle relaxants (ex. diazepam PO). Refer the patient for dental evaluation when practical. MEDEVAC is usually not necessary.

~~

Occlusal Trauma -- This can occur from excessive force placed on teeth and is usually from a "high" restoration or bruxism or occlusal discrepancies. If the teeth hurt primarily in the morning then suspect nocturnal bruxism and review the treatment recomendations for myofacial pain. Determine if there are factitious or parafunctional habits that contribute to the problem. Treatment consists of: 1) eliminating or reducing aggravating habits (counsel the patient to reduce stress which often predisposes to bruxism); 2) adjusting the occlusion if able (ex. a restoration that is too "high"); and 3) having the patient avoid masticating in the affected area if possible. Refer the patient for definitive dental care when practical. MEDEVAC is not usually necessary.

~~

Fractured Crown, Small Pulp Exposure -- Use local anesthesia/analgesics. Remove any mobile tooth fragments if present and if you are able. Isolate the tooth with 2 x 2 gauze and place a calcium hydroxide base over the pulp and adjacent dentin. If you are able apply a resin temporary restoration. If unable, mix and place a zinc oxide and eugenol restoration to cover the calcium hydroxide base. If the restoration cannot be placed nor retained observe the area closely. The patient may develop irreversible pulpitis. Smooth any sharp edges on the tooth with wet/dry 220 aluminum oxide sandpaper or a small round-end metal file. Refer the patient for endodontic evaluation and definitive care when able. MEDEVAC may be necessary.

~~

Fractured Crown, Large Pulp Exposure -- Use local anesthesia/analgesics. Remove any mobile tooth fragments if present and if you are able. Remove approximately 2 mm (depth) of pulp tissue with a spoon excavator. Good anesthesia is desirable. Lightly moisten a cotton pellet with eugenol or formocresol and gently place over the remaining pulp stump. Mix and place a zinc oxide and eugenol restoration. Check the occlusion. Remove any sharp edges on the tooth with wet/dry 220 aluminum oxide sandpaper or a small round-end metal file. Observe the patient closely as an apical abscess or acute apical periodontitis may develop. Refer the patient for an endodontic evaluation and definitive care as soon as practical. MEDEVAC may be necessary.

~~

Total Avulsion of Tooth, Good Candidate for Replantation -- Ideally the tooth should be reimplanted immediately after avulsion. Use sterile saline to rinse any debris from the tooth then insert the tooth to its original position. If there is a time delay while awaiting replantation then store the tooth in saline or milk. Gently rinse the debris from the tooth with sterile saline. Preserve as much of the tissue on the tooth as possible. Remove any blood clots/foreign bodies/bone fragments from the socket. Local anesthesia is usually required if a time delay has occurred. Reposition the tooth in the socket with adequate pressure to reseat completely. Stabilize the tooth for 1-2 weeks using sutures/floss/light wire/fishline/or dental compound. Give the patient a tetanous booster and antibiotics (penicillin if not otherwise contraindicated) and refer for for an endodontic evaluation and definitive care when able. MEDEVAC may be necessary.

~~

Total Avulsion of Tooth, Poor Candidate for Replantation -- Inspect the tooth to determine if tooth fragments remain in the tooth socket. If so then anesthetize and attempt retrieval of the fragments. If you are unable to retrieve fragments, give antibiotics. Remove obvious small bone chips except any relatively large areas of cortical plate which remain intimately covered with soft tissue. Leave these intact and attempt to reposition them if necessary. Suture any lacerations and have the patient close on a few 2 x 2 gauze squares for 30 minutes. Use analgesics. Check adjacent teeth for trauma or fractures. Antibiotics are not usually necessary. Refer the patient for definitive dental care as soon as practical. If the tooth was avulsed cleanly then MEDEVAC will probably not be necessary.

~~

Displacement/Mobility of Tooth, Favorable Prognosis -- Local anesthesia and analgesics may be needed. Debride and suture any lacerations. Gently reposition the tooth to its original position using the patient's occlusion, adjacent teeth, and input from the patient to guide you. Stabilize the tooth in its original position for 1-2 weeks with sutures/light wire/floss/or fishline. Check to insure that the patient does not occlude heavily on the traumatized tooth. If so either reposition the tooth or adjust the occlusion if you are able. The patient will need dental evaluation and follow-up. Observe closely and refer when practical. Monitor for infection. MEDEVAC may be necessary.

~~

Displacement/Mobility of Tooth, Guarded Prognosis -- Local anesthesia and analgesics are usually indicated. If the tooth has a loose fragment related to a fracture line then attempt to remove the fragment. If the remaining tooth structure is extremely mobile attempt removal of the tooth.
If not then cover the patient with antibiotics (penicillin if not otherwise contraindicated) and check regularly. Debride and suture any lacerations. MEDEVAC may be necessary if an acute phase develops which cannot be resolved. Otherwise, refer for dental evaluation and treatment at the earliest opportunity.

~~

Fractured Crown, Pulp Not Exposed -- Local anesthesia and analgesics may be necessary. Remove any mobile tooth fragments if you are able. Isolate the tooth with 2 x 2 gauze and mix and place a calcium hydroxide base to cover the exposed dentin. If you are able, apply a resin temporary restoration as per your IDT Syllabus. If you are unable then paint two layers of cavity varnish over the calcium hydroxide base (or dentin alone if a base cannot be placed). The base may be difficult to retain and may need frequent replacement. Smooth any sharp edges with 220 wet/dry aluminum oxide sandpaper or a small round-end metal file. Monitor the patient closely for development of a pulpitis. Refer the patient for definitive care when able. MEDEVAC is usually not necessary.

~~

Enamel Fracture -- Local anesthesia and analgesics are not usually necessary. Check the location of the fracture or sharp edge by sight/feel/and conversation with the patient. Remove any mobile tooth fragments if you are able. Smooth any sharp edges with wet/dry 220 aluminum oxide sandpaper or a small round-end metal file. Smooth the sharp edges until they feel smooth to your finger and to the patient's tongue. Refer the patient when practical for follow-up dental evaluation and treatment. MEDEVAC is usually not necessary.

~~

Root Fracture -- Use local anesthesia and analgesics. Isolate the tooth with 2 x 2 gauze. If part of the tooth is extremely mobile then attempt its removal. If the tooth itself is extremely mobile consider its removal. If not, attempt to cover any exposed pulp tissue with a calcium hydroxide base followed by a zinc oxide and eugenol restoration. Place the patient on antibiotics (usually penicillin if not otherwise contraindicated). If a base or restoration cannot be placed then observe the patient closely as an apical abscess/apical periodontitis may develop. A periodontal abscess can also develop. MEDEVAC may be necessary. Refer for dental evaluation and treatment when able.

~~

Fractured Alveolar Bone -- Use local anesthesia/analgesics/antibiotics (usually penicillin if not otherwise contraindicated). Debride the area of any small loose bone chips or spicules. Do not remove larger pieces of alveolar bone that are intimately covered with soft tissue. Gently pinch or mold the fractured alveolar bone through the gingival/mucosal tissues. Suture any lacerations and attempt to stabilize the bone by splinting teeth in the mobile segment with adjacent teeth using floss/light wire/suture/or fishline. Monitor closely for possible infection. MEDEVAC may be necessary.

~~

Fractured Mandible -- Maintain airway function and control bleeding. Support the patient's vital signs. Use analgesics/antibiotics (usually penicillin if not otherwise contraindicated. Debride and irrigate any lacerations. Loosely approximate the wound edges with tacking sutures but do not attempt definitive soft tissue closure if the laceration coexists with facial fractures. Close through-and-through lacerations with a watertight closure of the oral mucosa

followed by a layered closure to the skin. Improper use of external immobilization bandages is dangerous and can further embarrass the airway. MEDEVAC the patient as soon as possible.

~~

Fractured Maxilla -- Maintain airway and control bleeding (temporary nasal packing may be needed). Support the patient's vital signs. Use analgesics/antibiotics (usually penicillin unless otherwise contraindicated). Debride and irrigate any lacerations. Loosely reapproximate the wound edges with tacking sutures but do not attempt definitive soft tissue closure if the laceration coexists with facial fractures. Close through-and-through lacerations with a watertight closure of the oral mucosal followed by a layered closure to the skin. The improper use of external immobilization bandages is dangerous and can further embarrass the airway. MEDEVAC the patient in a head-up or lateral prone position.

~~

Fractured Facial Bones -- Maintain the airway and control bleeding. Support vital signs. Use analgesics/antibiotics (usually penicillin unless otherwise contraindicated). Debride and irrigate any lacerations. Loosely reapproximate the wound edges with tacking sutures but do not attempt definitive soft tissue closure if the laceration coexists with facial fractures. Close through-and-through lacerations with a watertight closure of the oral mucosa followed by a layered closure to the skin. Evaluate ocular function and orbital/periorbital trauma. Check for paresthesias in infra- and supraorbital regions. MEDEVAC the patient in a head-up or lateral prone position.

~~

Neurologic Injury -- Maintain the airway and control bleeding. Support vital signs. Perform neurologic examination and assess the level of consciousness. Assess the posture and movements and reflexes. Evaluate eye movements and pupils. Evaluate the gross focal neurological deficit. Determine the cause and time of injury and whether there are any associated injuries/shock/hypoxemia/ or other medical complications. MEDEVAC is usually indicated.

~~

DEFRTNS.BAS

REM The definition and window routines for DENTAL and DIFF are contained in this module.

REM This module was modified last on 2/23/89 by Cindy Burgess-Russotti

DEFINT A-Z

DIM WINDscratt(5), WINDframatt(5), WINDheader$(5)
DIM WINDrow(5), WINDcol(5), WINDheight(5), WINDwidth(5)
DIM wind%(2000, 5)
DIM WINDrowptr(5), WINDcolptr(5)   *'UL corner of frame*

DIM dindx(120, 2), item$(120), disease$(34), disindx(34, 2)
DIM option$(10, 2), opline(10)
DIM response(92), z(35), corpresp(36)

REM include common statements for all modules

rem $include: 'dentcomm.bas'
rem $include: 'windcomm.bas'

Subroutine UCASE
called from: DEFINITIONROUTINE
This routine converts a string from lower case to upper case.

```
SUB UCASE(x$) STATIC
 length=LEN(x$)
 IF length=o THEN
  x$=""
 ELSE
  FOR i=1 TO length              •
   ch=ASC(mid$(x$, i, 1))
   IF ch96 AND ch  THEN
MID$(x$, i, 1)=CHR$(ch-32)
   END IF
  NEXT i
```

```
END IF
END SUB
```

Subroutine CLEARWINDOW
called from: DEFINITIONROUTINE, MAKEWINDOW,DEFINITIONROUTINE2,
DISEASEDEFINITIONS, PRIDISEASEDEFS.
calls: SCROLLUP
This routine clears the current window of text.

```
SUB clearwindow STATIC

  wno = WINDcurrent
  lur = WINDrow(wno) + 1
  luc = WINDcol(wno) + 1
  rlr = WINDrow(wno) + WINDheight(wno) - 2
  rlc = WINDcol(wno) + WINDwidth(wno) - 2
  attr = WINDscratt(wno)
  linewidth = WINDwidth(wno) - 2

  scrollines = 0
  CALL scrollup (lur, luc, rlr, rlc, scrollines, attr)
  WINDrowptr = 1
  WINDcolptr = 1
END SUB
```

Subroutine COMPUTEROWCOL
called from: DEFINITIONROUTINE, DISEASEDEFINITIONS
This routine computes the relative row and column for item$(counter).

```
SUB computerowcol (counter, row, col) STATIC

numline = WINDheight(WINDcurrent) - 2
modecount = (counter - 1) MOD numline
row = modecount + 1
'IF row = 0 THEN row = numline
col = INT((counter - 1) / numline) * 25 + 1
END SUB
```

Subroutine DEFINITIONROUTINE
called from: main program (DENTAL)
calls: PUSHWINDOW, WLOCATE, WPRINT, UCASE, FPRINT, COMPUTEROWCOL,
HELPDEFINITIONS, REMOVEWINDOW, CLEARWINDOW.
This routine is called when the user selects term definitions from the
definition menu. All the words that can be defined are displayed in a

window on the screen. The user can then use the direction keys to highlight the word he wants to have defined or he can type it on the command line at the bottom of the screen. Once the word is selected, a window is created and the definition is displayed in the window.

```
SUB definitionroutine STATIC
defint a-z


'make window and throw items in window
'routine to move cursor and update bottom command line.
'select item
'clean up and exit

attr% = 7
'This window in effect acts as a CLS statement, which can print outside the
definition list window without overprinting other stuff

CALL pushwindow(attr%, 0, "", 1, 1, 25, 80)
'      This window is the actual definition selection window.
CALL pushwindow(attr%, select1f, "Definition Selection", 4, 4, 15, 75)


'      compute normal attribute and inverse of it.
nl = WINDscratt(WINDcurrent)
nlfor = nl MOD 16
nlbak = INT(nl / 16)
inverse = nlfor * 16 + nlbak

frame = abs(WINDframatt(WINDcurrent))
fg = frame MOD 16
bg = INT(frame / 16)

' show command line
LOCATE 24, 5, 0
PRINT "Definition ";

'      Print directions
locate 25, 1:color defkeyline, defkeyline:print space$(80);
locate 25, 3:color normal, bground:print " Esc ";:color defkeylettr,
defkeyline:print "- Quit";
locate 25, 40:color normal, bground:print " PgDn ";:color defkeylettr,
defkeyline:print "- Next Page";
locate 25, 58:color normal, bground:print " PgUp ";:color defkeylettr,
defkeyline:print "- Previous Page";
```

```
color normal, bground

page=1
printnewpage:
locate 18, 35:color fg, bg:print "Page";page;" of 2";:color normal, bground
if page=1 then
  firstword=1
  lastword=39
else
  firstword=40
  lastword=77
end if

counter = firstword  'Print terms on screen

FOR c = 1 TO 78 STEP 25
 FOR r = 1 TO 13
   CALL wlocate(r, c)
   if len(item$(counter))  23 then  'If item$ is too long, print the
leftmost 23 characters
     CALL wprint(left$(item$(counter), 23))              else

    CALL wprint(item$(counter))
   end if

   counter = counter + 1
   IF counter  lastword THEN EXIT FOR
 NEXT r
 IF counter  lastword THEN EXIT FOR
NEXT c

'      initialize certain variables
counter = firstword         'number of word highlighted
localrow = 1          'coordinates relative to window
localcol = 1
commanditem$ = item$(counter)  'word typed on command line
call ucase (commanditem$)
commandptr = LEN(commanditem$) 'string pointer for word on command line
arrowflag = 1       '=1 if arrow key was last pressed

 REM Highlight first word on screen

CALL wlocate( localrow, localcol)
if len(item$(counter))  23 then
```

```
     CALL fprint(left$(item$(counter), 23), inverse)
else
 CALL fprint(item$(counter), inverse)
end if
LOCATE 24, 17
CALL fprint(item$(counter), inverse)
LOCATE 24, 17 + commandptr, 1

   REM Get input from user

DO
 DO
  a$ = INKEY$
 LOOP WHILE a$ = ""
 IF LEN(a$) = 2 THEN   'arrow keys or pgup, pgdn pressed

  CALL wlocate (localrow, localcol)
  if len(item$(counter))  23 then
   CALL fprint(left$(item$(counter), 23), nl)
  else
   CALL fprint(item$(counter), nl)
  end if

  code2key = ASC(RIGHT$(a$, 1))
  SELECT CASE code2key
   CASE 72    'up arrow
     counter = counter - 1
     IF counter  firstword THEN counter = lastword

   CASE 80    'down arrow
     counter = counter + 1
     IF counter  lastword THEN counter = firstword

   CASE 75    'left arrow
     IF (page=1 and counter  14) or (page=2 and counter  53) THEN
 counter = counter + 26
 IF counter  lastword THEN counter = lastword
     ELSE
 counter = counter - 13
     END IF

   CASE 77    'right arrow
     if page=1 then
 SELECT CASE counter
```

```
    CASE 1 TO 25
      counter = counter + 13
    CASE 26
      counter = lastword
    CASE 27 TO 39
      counter = counter - 26
    END SELECT
    else
 SELECT CASE counter
    CASE 40 TO 64
      counter = counter + 13
    CASE 65
      counter = lastword
    CASE 66 TO 78
      counter = counter - 26
    END SELECT
    end if


    CASE 71    'home arrow
    counter = firstword

    CASE 79    'end arrow
    counter = lastword

    CASE 73                'PgUp
     if page = 2 then
    page=1
     end if

    CASE 81                'PgDn
     if page = 1 then
    page=2
     end if

    CASE ELSE
     BEEP

    END SELECT
```

REM *If page up or page down was pressed, then blank out command line,*
otherwise highlight word that corresponds with counter.

```
    if (code2key = 73) or (code2key = 81) then  'PgUp or PgDn
```

```
LOCATE 24, 17
CALL fprint(space$(50), nl) 'Blank out command line
  else
CALL computerowcol(counter - firstword + 1, localrow, localcol)
CALL wlocate (localrow, localcol)
if len(item$(counter))  23 then
  CALL fprint(left$(item$(counter), 23), inverse)
else
  CALL fprint(item$(counter), inverse)
end if
```

REM *Print highlighted word on command line*

```
LOCATE 24, 17
CALL fprint(space$(50), nl)
CALL fprint(item$(counter), inverse)
commanditem$ = item$(counter)
call ucase(commanditem$)
commandptr = LEN(commanditem$)
LOCATE 24, 17 + commandptr, 1
arrowflag = 1
  end if
```

REM *User entered a letter or blank at command line*

```
ELSE
'other keys
 call UCASE (a$)
 SELECT CASE ASC(LEFT$(a$, 1))
   CASE 32, 48 TO 57, 65 TO 90     'alphanumerics and blank
    IF arrowflag = 1 THEN
  arrowflag = 0
  commanditem$ = ""
  commandptr = 0
  LOCATE 24, 17
  CALL fprint(space$(50), nl)
    END IF
    commanditem$ = commanditem$ + a$
    commandptr = commandptr + 1
    if commandptr  63 then
  commandptr=63
  beep
    end if
    LOCATE 24, 16 + commandptr
```

```
    CALL fprint(a$, inverse)
    LOCATE 24, 17 + commandptr, 1


  CASE 8              'backspace/delete
    IF arrowflag = 1 THEN arrowflag = 0
    commandptr = commandptr - 1
    IF commandptr  0 THEN commandptr = 0
    LOCATE 24, 17 + commandptr, 1
    CALL fprint(" ", nl)
    commanditem$ = LEFT$(commanditem$, commandptr)


  CASE 27             'Esc to exit
    LOCATE 24, 17
    CALL fprint("      ", inverse)
  CASE 13             'CR to accept
    IF arrowflag = 0 THEN
oldcounter=counter
counter = 0
FOR i = 1 TO 77
  tempitem$=item$(i)
  call UCASE (tempitem$)
  IF commanditem$ = tempitem$ THEN
    CALL computerowcol(oldcounter - firstword + 1, localrow, localcol)
    CALL wlocate (localrow, localcol)
    if len(item$(oldcounter))  23 then
    CALL fprint(left$(item$(oldcounter), 23), nl)
    else
    CALL fprint(item$(oldcounter), nl)
    end if
    counter = i
  end if
NEXT i
  END IF
  IF counter = 0 THEN
locate 24, 17, 0
call fprint("NO MATCH FOR "+commanditem$, inverse)
BEEP
pause!=timer+.75
do while timer  pause!
loop
counter=oldcounter
LOCATE 24, 17
CALL fprint(space$(50), nl)
CALL fprint(item$(counter), inverse)
```

```
    commanditem$ = item$(counter)
    call ucase(commanditem$)
    commandptr = LEN(commanditem$)
    LOCATE 24, 17 + commandptr, 1

      ELSE
    if arrowflag=0 then
       CALL computerowcol(counter - firstword + 1, localrow, localcol)
       CALL wlocate (localrow, localcol)
       if len(item$(counter)) 23 then
          CALL fprint(left$(item$(counter), 23), inverse)
       else
          CALL fprint(item$(counter), inverse)
       end if
       commandptr = LEN(commanditem$)
    end if

    CALL helpdefinitions(counter, item$(counter))   'Print definition of word
    LOCATE 24, 17 + commandptr, 1
       END IF
       arrowflag = 1

    CASE ELSE
      BEEP

    END SELECT

    END IF
    REM loop until Esc, PgDn or PgUp
    LOOP UNTIL a$ = CHR$(27) or (code2key=81) or (code2key=73)

     code2key=0

    if a$=chr$(27) then
       CALL removewindow    'containing definition list
       CALL removewindow    ' blank window
       LOCATE , , 0
    else
       call clearwindow
       goto printnewpage
    end if

    END SUB
```

Subroutine EXPLODE
called from: MAKEWINDOW
calls: SCROLLUP, EXPLOSION, DUD
This routine explodes the window onto the screen.

SUB explode (wno) STATIC

```
'     tlr    - top left hand corner of the window frame.
'     tlc    - top left hand column of the window frame.
'     numline - number of lines (rows) in the window.
'     numcol  - number of columns in the window.
' NOTE: numline and numcol include the window frame, tlr and tlc are the
coordinates for the top left hand corner of the frame.



DEFINT A-Z

  tlr = WINDrow(wno)
  tlc = WINDcol(wno)
  numline = WINDheight(wno)
  numcol = WINDwidth(wno)
  title$ = WINDheader$(wno)
  screenattr = WINDscratt(wno)
  frameattr = WINDframatt(wno)


' If Frameattr = 0 Blank window
' If Frameattr  0 Print expoding frame
' If Frameattr  0 Don't print expoding frame


'  No need to draw window if window is blank.
 IF frameattr = 0 THEN
   rlr = WINDrow(wno) + WINDheight(wno)
   rlc = WINDcol(wno) + WINDwidth(wno)
   scrollines = 0
   CALL scrollup (tlr, tlc, rlr, rlc, scrollines, screenattr)
 ELSEIF frameattr  0 then
' Print exploding frame
   CALL explosion(tlr, tlc, numline, numcol, frameattr)
 else
' Don't print exploding frame
   CALL dud (tlr, tlc, numline, numcol, frameattr)
 end if

 if frameattr  0 then
```

```
'     Print heading on window frame.
   oklen = numcol - 2
   okstartcol = tlc + 1
   title$ = MID$(title$, 1, oklen)
   titlelen = LEN(title$)
   surplus = oklen - titlelen
   titleoffset = INT(surplus / 2)
   LOCATE tlr, okstartcol + titleoffset
   CALL fprint(title$, frameattr)
END IF

END SUB
```

Subroutine EXPLOSION
called from: EXPLODE
calls: FPRINT
This routine draws the exploding window using the following:
ulrow - upper left row of window (includes frame).
ulcol - upper left column of window (includes frame).
numline - number of rows in the window (includes frame).
numcol - number of columns in the window (includes frame).
frameattr - attribute of frame.

```
SUB explosion (ulrow, ulcol, numline, numcol, frameattr) STATIC

   maxline = numline - 2
   maxcol = numcol - 2
   startrow = ulrow + INT(numline / 2)
   startcol = ulcol + INT(numcol / 2)
   horiz = -2
   vert = -2
   deltarow = startrow
   deltacol = startcol
   DO
     horiz = horiz + 2
     IF horiz  maxcol THEN horiz = maxcol
     vert = vert + 2
     IF vert  maxline THEN vert = maxline
     deltarow = deltarow - 1
     IF deltarow  ulrow THEN deltarow = ulrow
     deltacol = deltacol - 1
     IF deltacol  ulcol THEN deltacol = ulcol
       topbuffer$ = STRING$(horiz, 196)
       buffer$ = SPACE$(horiz)
```

```
        topstring$ = CHR$(218) + topbuffer$ + CHR$(191)
        botstring$ = CHR$(192) + topbuffer$ + CHR$(217)
        midstring$ = CHR$(179) + buffer$ + CHR$(179)
        LOCATE deltarow, deltacol
        CALL fprint(topstring$, frameattr)
        FOR dummy = 1 TO vert
    LOCATE deltarow + dummy, deltacol
    CALL fprint(midstring$, frameattr)
        NEXT dummy
        LOCATE deltarow + vert + 1, deltacol
        CALL fprint(botstring$, frameattr)
    LOOP UNTIL vert = maxline AND horiz = maxcol

END SUB

    Subroutine DUD
    called from: EXPLODE
    calls: FPRINT
    This routine draws the window without exploding using the following:
    ULROW - upper left row of window (includes frame).
    ULCOL - upper left column of window (includes frame).
    NUMLINE - number of rows in the window (includes frame).
    NUMCOL - number of columns in the window (includes frame).
    FRAMEATTR - attribute for frame (starts out as negative number).

SUB dud (ulrow, ulcol, numline, numcol, frameattr) STATIC
    frameattr = abs (frameattr)
    startrow = ulrow
    startcol = ulcol
    horiz = numcol - 2
    vert = numline - 2
        topbuffer$ = STRING$(horiz, 196)
        buffer$ = SPACE$(horiz)
        topstring$ = CHR$(218) + topbuffer$ + CHR$(191)
        botstring$ = CHR$(192) + topbuffer$ + CHR$(217)
        midstring$ = CHR$(179) + buffer$ + CHR$(179)
        LOCATE startrow, startcol
        CALL fprint(topstring$, frameattr)
        FOR dummy = 1 TO vert
    LOCATE startrow + dummy, startcol
    CALL fprint(midstring$, frameattr)
        NEXT dummy
        LOCATE startrow + vert + 1, startcol
        CALL fprint(botstring$, frameattr)
```

END SUB

Subroutine HELPDEFINITIONS
called from: DEFINITIONROUTINE
calls: PUSHWINDOW, REMOVEWINDOW
This routine creates a window and displays a definition in it.

SUB helpdefinitions (counter, item$) STATIC


```
field#1, 60 as record$
linelimit=60:defcol=1:linecount=2

 title$ = "Definition cf " + item$
 CALL pushwindow(defls, deflf, title$, 8, 10, 10, 62)

' routine to get definition string.

   r=dindx(counter, 1)
   for r2 = r to r+dindx(counter, 2)-1
   get#1, r2
   call wlocate(linecount, defcol)
   call wprint (record$)
   linecount=linecount+1
   next r2

scrn=WINDscratt(WINDcurrent)
fg = scrn mod 16
bg = int(scrn / 16)
locate 16, 24:color fg, bg:print "Press any key to continue...";:color normal,
bground
 a$ = INPUT$(1)

 CALL removewindow
```

END SUB

Subroutine MAKEWINDOW
calls: SETWINDOWDEFS, WINDOWSAVE, EXPLODE, SHIFTWINDOW
This procedure creates the window.
wno = window number, used to identify the window.
s = screen attribute for within the window.

f = attribute for frame.

h$ = title which is centered and printed on the top frame line.

r = top left row number (actually points to corner of frame).

c = top left column number (actually points to corner of frame).

h = height of window, including frame itself.

w = width of window, including frame itself.

```
SUB makewindow (wno, s, f, h$, r, c, h, w) STATIC
  lurf = r + 1
  lucf = c + 1
  rlrf = r + h - 1
  rlcf = c + w - 1
  IF lurf  1 OR lucf  1 OR rlrf  25 OR rlcf  80 THEN
    CLS
    PRINT "Attempting to draw window number "; wno; "is illegal."
    BEEP
    STOP
  END IF




  'get rid of cursor
  LOCATE , , 0

  'update global window variables
  CALL setwindowdefs(wno, s, f, h$, r, c, h, w)

  'save background
  CALL windowsave(wno)

  'draw frame
  CALL explode(wno)

  'put cursor in the top left corner of writable region of window and
  'restore blinking aspect.
  LOCATE r + 1, c + 1, 1
  CALL shiftwindow(wno)
  CALL clearwindow
END SUB
```

Subroutine PUSHWINDOW

called from:DEFINITIONROUTINE, DEFINITIONROUTINE2, DISEASEDEFINITIONS

calls: MAKEWINDOW

This routine is like makewindow, except that you don't have
to keep track of the window number. Just be sure that you do not use
more than five windows at one time.
s = screen attribute for within the window.
f = attribute for frame. If a negative number the window will not
explode.
h$ = title which is centered and printed on the top frame line.
r = top left row number (actually points to corner of frame).
c = top left col number (actually points to corner of frame).
h = height of window, including frame itself.
w = width of window, including frame itself.

SUB pushwindow (s, f, h$, r, c, h, w) STATIC
  wno = WINDcurrent + 1
  CALL makewindow(wno, s, f, h$, r, c, h, w)

END SUB

Subroutine REMOVEWINDOW
called from: DEFINITIONROUTINE, HELPDEFINITIONS, DEFINITIONROUTINE2,
DISEASEDEFINITIONS
calls: WINREST, SHIFTWINDOW
This routine removes the current window and restores the screen
beneath it. It also decrements WINDcurrent so that the
previous window is the current one. WINDcurrent=0 if no
windows exist.

SUB removewindow STATIC

  wno = WINDcurrent
  tlr = WINDrow(wno)
  tlc = WINDcol(wno)
  numline = WINDheight(wno)
  numcol = WINDwidth(wno)

'   *QB 3.0 routine*
  CALL ptr86(segment, offset, VARPTR(wind%(0, wno)))
  CALL winrest(segment, offset, tlr, tlc, numcol, numline)

'   *QB 4.0 routine*
' CALL winrest(VARSEG(wind%(0, wno)), VARPTR(wind%(0, wno)), tlr, tlc,
numcol, numline)

```
      wno = wno - 1
      IF wno  0 THEN wno = 0
      CALL shiftwindow(wno)
   END SUB



      Subroutine SETWINDOWSDEFS
      called from: MAKEWINDOW, PUSHWINDOW
      This procedure sets the global variables.


   SUB setwindowdefs (wno, s, f, h$, r, c, h, w) STATIC

      WINDscratt(wno) = s
      WINDframatt(wno) = f
      WINDheader$(wno) = h$
      WINDrow(wno) = r
      WINDcol(wno) = c
      WINDheight(wno) = h
      WINDwidth(wno) = w
      WINDcurrent = wno
      WINDrowptr(wno) = 1
      WINDcolptr(wno) = 1
   END SUB

      Subroutine SHIFTWINDOW
      called from: MAKEWINDOW, REMOVEWINDOW
      This routine shifts to current window wno.  If wno=0 then
      the whole screen 80X25 is used.

   SUB shiftwindow (wno) STATIC

      IF wno  0 OR wno  5 THEN wno = 0
      WINDcurrent = wno
      IF wno  0 THEN
         WINDcurrentrow = WINDrowptr(wno)
         WINDcurrentcol = WINDcolptr(wno)
      END IF
   END SUB

      Subroutine WINDOWSAVE
      called from: MAKEWINDOW
```

Calls: WINSAVE
This routine saves the background screen beneath the upcoming window.

SUB windowsave (wno) STATIC

```
tlr = WINDrow(wno)
tlc = WINDcol(wno)
numline = WINDheight(wno)
numcol = WINDwidth(wno)


'     QB 3.0 routine
CALL ptr86(segment, offset, VARPTR(wind%(0, wno)))
CALL winsave(segment, offset, tlr, tlc, numcol, numline)

'     QB 4.0 routine
' CALL winsave(VARSEG(wind%(0, wno)), VARPTR(wind%(0, wno)), tlr, tlc,
numcol, numline)

END SUB
```

Subroutine WLOCATE
called from: DEFINITIONROUTINE, HELPDEFINITIONS, DEFINITIONROUTINE2,
DISEASEDEFINITIONS, PRIDISEASEDEFS
This routine acts like locate, except that all locations
are relative to the current window. The top left corner of the window
(not including frame) would be 1, 1.

```
SUB wlocate (row, col) STATIC
 wno = WINDcurrent
 lur = WINDrow(wno) + 1
 luc = WINDcol(wno) + 1
 rlr = WINDrow(wno) + WINDheight(wno) - 2
 rlc = WINDcol(wno) + WINDwidth(wno) - 2
'     Check if a window is open.
 IF wno  0 THEN
   physrow = row + lur - 1
   IF physrow  rlr THEN physrow = rlr
   physcol = col + luc - 1
   IF physcol  rlc THEN physcol = rlc
 ELSE
   physrow = row
   physcol = col
```

```
END IF
LOCATE physrow, physcol, 0

END SUB
```

Subroutine WPRINT
called from: DEFINITIONROUTINE
calls: FPRINT
This routine prints text$ wthin the current window.

```
SUB wprint (text$) STATIC

  wno = WINDcurrent
  lur = WINDrow(wno) + 1
  luc = WINDcol(wno) + 1
  rlr = WINDrow(wno) + WINDheight(wno) - 2
  rlc = WINDcol(wno) + WINDwidth(wno) - 2
  attr = WINDscratt(wno)
  linewidth = WINDwidth(wno) - 2
```

'will add stuff later. For now, just use fprint.
```
  CALL fprint(text$, attr)

END SUB
```

Subroutine WSCROLLPRINT
Calls: scrollup
This routine prints a string of text in the current window scrolling as
necessary.

```
SUB wscrollprint (text$) STATIC

  wno = WINDcurrent
  lur = WINDrow(wno) + 1
  luc = WINDcol(wno) + 1
  rlr = WINDrow(wno) + WINDheight(wno) - 2
  rlc = WINDcol(wno) + WINDwidth(wno) - 2
  attr = WINDscratt(wno)
  linewidth = WINDwidth(wno) - 2

scrollines = 1
CALL scrollup (lur, luc, rlr, rlc, scrollines, attr)
IF LEN(text$) linewidth THEN
```

```
  WHILE LEN(text$)  linewidth
    newtext$ = LEFT$(text$, linewidth)
    text$ = RIGHT$(text$, LEN(text$) - linewidth)
    CALL scrollup (lur, luc, rlr, rlc, scrollines, attr)
    LOCATE rlr, luc, 0
    CALL fprint(newtext$, attr)
  WEND
END IF
IF LEN(text$)  0 THEN
  CALL scrollup (lur, luc, rlr, rlc, scrollines, attr)
  LOCATE rlr, luc, 0
  CALL fprint(text$, attr)
END IF

END SUB
```

Subroutine DEFINITIONROUTINE2
called from: GETRESP, TRTRESP, PRESSRET, GETRESP2
calls: PUSHWINDOW, FPRINT, UCASE, WLOCATE, CLEARWINDOW,
REMOVEWINDOW
  In this routine, a window is created where the user can enter a word he
  wants to have defined. A second window is created where the
  corresponding definition is displayed.

```
SUB definitionroutine2 STATIC
defint a-z

  dim defptr(100), startrec(40), endrec(40)

  pagelimit=5
  selectrow=18:selectcol=10:selecthth=5:selectwid=62
  field#1, 60 as record$
  CALL pushwindow(select2s, select2f, "Definition of Terms", selectrow,
selectcol, selecthth, selectwid)
  nl = WINDscratt(WINDcurrent)
  nlfor = nl MOD 16
  nlbak = INT(nl / 16)
  inverse = nlfor * 16 + nlbak
  locate selectrow+selecthth-1, selectcol+26
  call fprint("Esc - Quit", abs(select2f))
  searchdef$=""
  searchdefptr=0
  ptrcounter = 1: numlines = 0
  call wlocate (2, 5)
```

```
call fprint ("Enter letter(s) or word ", select2s)
locate selectrow+2, selectcol+29 + searchdefptr, 1


do
 do
   z$=inkey$
 loop while z$=""

 call UCASE (z$)
 SELECT CASE ASC(LEFT$(z$, 1))
   CASE 48 TO 57, 65 TO 90      'alphanumerics
 searchdef$ = searchdef$ + z$
 searchdefptr = searchdefptr + 1
 if searchdefptr  32 then    'word can't be longer than 32 characters
   searchdefptr=32
   beep
 end if
 locate selectrow+2, selectcol+28 + searchdefptr
 CALL fprint(z$, inverse)
 locate selectrow+2, selectcol+29 + searchdefptr, 1

   CASE 8                 'backspace/delete
     searchdefptr = searchdefptr - 1
     IF searchdefptr  0 THEN searchdefptr = 0
     locate selectrow+2, selectcol+29 + searchdefptr, 1
     CALL fprint(" ", nl)
     searchdef$ = LEFT$(searchdef$, searchdefptr)


   CASE 27                 'Esc to exit
     locate selectrow+2, selectcol+29
     CALL fprint(space$(32), nl)
   CASE 13                 'CR to accept
     if searchdef$  "" then
     for defcounter = 1 to 110      'look for a match
       if (defcounter=52) or (defcounter=54) or (defcounter=59) or
(defcounter=74) then    'These words must be an exact match (Necrotizing,
Occlusal surface, Periodontic and Ulcerated).
       tempdef$=item$(defcounter)
       call ucase(tempdef$)
       if searchdef$=tempdef$ then
         defptr(ptrcounter)=defcounter
         ptrcounter = ptrcounter + 1
         numlines = numlines + dindx(defcounter, 2)
       end if
```

```
       else
       tempdef$=left$(item$(defcounter), len(searchdef$))
       call ucase(tempdef$)
       if searchdef$=tempdef$ then
         defptr(ptrcounter)=defcounter
         ptrcounter = ptrcounter + 1
         numlines = numlines + dindx(defcounter, 2)
       end if
       end if
    next defcounter
    numofwords = ptrcounter - 1


    IF numofwords = 0 THEN      'no match
       nomatch$="No Match for "+searchdef$
       locate selectrow+3, selectcol + int((60-len(nomatch$))/2), 0
       call fprint(nomatch$, nl)
       pause!=timer+.75
       do while timer  pause!
       loop
       BEEP
       locate selectrow+3, selectcol+int((60-len(nomatch$))/2)
       call fprint(space$(len(nomatch$)), nl)

    ELSE
       if numlines  pagelimit then
    'Determine how many pages of definitions, and the first and last record number
    for each page.
         numofpages = int(numlines/pagelimit)
         linesonlastpage=numlines mod pagelimit
         if linesonlastpage  0 then
         numofpages=numofpages+1
         end if
         linesonpage=pagelimit
       else
         numofpages=1
         linesonlastpage=0
         linesonpage=numlines
       end if
       firstrec=dindx(defptr(1), 1)
       lastrec=dindx(defptr(numofwords), 1)+dindx(defptr(numofwords), 2)-1
       page=1
       startrec(page)=firstrec
       endrec(page)=startrec(page)+linesonpage-1
```

```
page=page+1
do while page  numofpages
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonpage-1
  page=page+1
loop
if linesonlastpage  0 then
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonlastpage-1
else
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonpage-1
end if
CALL pushwindow (def2s, def2f, "", 5, 10, linesonpage+3, 62)
'Create window and display
locate linesonpage+7, 15
call fprint ("PgUp - Previous Page   PgDn - Next Page   Esc - Quit",
abs(def2f))
color normal, bground
page= 1
do
  l=1:c=1
  for r=startrec(page) to endrec(page)
  get#1, r
  call wlocate(l, c)
  call fprint (record$ , def2s)
  l=l+1
  next r
  call wlocate (linesonpage+1, 48)
  whatpage$="Page"+str$(page)+" of"+str$(numofpages)
  call fprint (whatpage$, def2s)
  do
  z2$=inkey$
  loop while z2$=""
  select case asc(right$(z2$, 1))
  case 81         'PgDn
    page=page+1
  case 73         'PgUp
    page=page-1
    if page  1 then
    page = 1
    end if
  case else
    if asc(z2$)  27 then
```

```
         beep
         end if
       end select
       CALL clearwindow
     loop until (page  numofpages) or (asc(z2$)=27)
     call removewindow
     for page= 1 to numofpages
       startrec(page)=0
       endrec(page)=0
     next page
   END IF
   ptrcounter = 1: numlines = 0
   searchdef$ = ""
   searchdefptr = 0
   locate selectrow+2, selectcol+29 + searchdefptr
   call fprint (space$(32), abs(select2s))
   locate selectrow+2, selectcol+29 + searchdefptr, 1
     else
     beep
     end if

   CASE ELSE
     BEEP

   END SELECT
 loop until asc(right$(z$, 1))=27
 locate , , 0                    'turn cursor off
 call removewindow
 END SUB
```

Subroutine DISEASEDEFINITIONS
called from: main program (DENTAL)
calls: PUSHWINDOW, WLOCATE, FPRINT, PRIDISEASEDEFS
This routine is called when the user selects disease definitions from
the definitions menu. All 33 diseases are displayed in a window on the
screen. A disease is selected by using the direction keys to highlight
it. Once the disease is selected, a window is created and the
corresponding definition is displayed in it.

```
SUB diseasedefinitions STATIC
defint a-z

field#3, 60 as record$
```

```
attr%=7
'make window and throw items in window
'routine to move cursor
'select item
'clean up and exit

'This window in effect acts as a CLS statement, so that can print outside
'      the definition list window without overprinting other stuff
'      (locate 24, x)
CALL pushwindow(attr%, 0, "", 1, 1, 25, 80)
'      This window is the actual definition selection window.
CALL pushwindow(attr%, select1f, "Disease Definition Selection", 3, 11, 19,
58)

'      compute normal attribute and inverse of it.
nl = WINDscratt(WINDcurrent)
nlfor = nl MOD 16
nlbak = INT(nl / 16)
inverse = nlfor * 16 + nlbak

frame = abs(WINDframatt(WINDcurrent))
fg = frame MOD 16
bg = INT(frame / 16)

'      Print directions
locate 25, 1:color defkeyline, defkeyline:print space$(80);
locate 25, 3:color normal, bground:print " Esc ";:color defkeylettr,
defkeyline:print "- Quit";
locate 25, 40:color normal, bground:print " PgDn ";:color defkeylettr,
defkeyline:print "- Next Page";
locate 25, 58:color normal, bground:print " PgUp ";:color defkeylettr,
defkeyline:print "- Previous Page";
color normal, bground
page=1

printnewpage2:   'The first 17 diseases are displayed on page 1
if page=1 then
  firstword=1
  lastword=17
else
  firstword=18 'The rest are displayed on page 2
  lastword=34
end if
```

```
counter=0
localrow=1
localcol=1
FOR I =firstword TO lastword   'Display diseases
  call wlocate (localrow, localcol)
  call fprint (disease$(i), nl)
  localrow=localrow+1
NEXT I
locate 21, 33
call fprint("(Page "+right$(str$(page), 1)+" of 2)", abs(select1f))

'     initialize certain variables
counter = firstword          'number of disease highlighted
localrow = 1          'coordinates relative to window
localcol = 1

CALL wlocate (localrow, localcol)
CALL fprint(disease$(counter), inverse)

DO                'allow user to select
 DO
  a$ = INKEY$
 LOOP WHILE a$ = ""
 IF LEN(a$) = 2 THEN
  'pgup, pgdn pressed

  CALL wlocate (localrow, localcol)
  CALL fprint(disease$(counter), nl)

  code2key = ASC(RIGHT$(a$, 1))
  SELECT CASE code2key
   CASE 72    'up arrow
    counter = counter - 1
    IF counter  firstword THEN counter = lastword

   CASE 80    'down arrow
    counter = counter + 1
    IF counter  lastword THEN counter = firstword

   CASE 73                'PgUp
    if page = 2 then
   page=1
    end if
```

```
      CASE 81                'PgDn
        if page = 1 then
      page=2
        end if

      CASE ELSE
        BEEP

      END SELECT


      if (code2key  73) and (code2key  81) then
      CALL computerowcol(counter - firstword + 1, localrow, localcol)
      CALL wlocate (localrow, localcol)
      CALL fprint(disease$(counter), inverse)
        end if

  ELSE
  'other keys
   SELECT CASE ASC(LEFT$(a$, 1))
     CASE 27                'Esc to exit
     CASE 13                'CR to accept
       call pridiseasedefs(counter) 'call subroutine to display definition
     CASE ELSE
       BEEP

   END SELECT

  END IF


      REM loop until Esc, PgDn or PgUp


  LOOP UNTIL a$ = CHR$(27) or (code2key=81) or (code2key=73)

   code2key=0

  if a$=chr$(27) then
     CALL removewindow        'containing definition list
     CALL removewindow        ' blank window
     LOCATE , , 0
  else
     call clearwindow
     goto printnewpage2
  end if
```

END SUB

Subroutine PRIDISEASEDEFS
called from: DISEASEDEFINITIONS
calls: PUSHWINDOW, WLOCATE, FPRINT, CLEARWINDOW, REMOVEWINDOW
This routine creates a window and displays the selected disease
definition.

SUB pridiseasedefs(counter) STATIC


```
dim startrec(40), endrec(40)
pagelimit=11
field#3, 60 as record$
numlines=disindx(counter, 2)
if numlines  pagelimit then
  numofpages = int(numlines/pagelimit)
  linesonlastpage=numlines mod pagelimit
  if linesonlastpage  0 then
    numofpages=numofpages+1
  end if
  linesonpage=pagelimit
else
  numofpages=1
  linesonlastpage=0
  linesonpage=numlines
end if
firstrec=disindx(counter, 1)
lastrec=disindx(counter, 1)+disindx(counter, 2)-1
page=1
startrec(page)=firstrec
endrec(page)=startrec(page)+linesonpage-1
page=page+1
do while page  numofpages
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonpage-1
  page=page+1
loop
if linesonlastpage  0 then
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonlastpage-1
else
  startrec(page)=endrec(page-1)+1
  endrec(page)=startrec(page)+linesonpage-1
```

```
end if
CALL pushwindow(def2s, def2f, "", 6, 7, linesonpage+3, 66)
locate linesonpage+8, 15
call fprint ("PgUp - Previous Page  PgDn - Next Page  Esc - Quit",
abs(def2f))
color normal, bground
page= 1
do
 l=1:c=4
 for r=startrec(page) to endrec(page)
   get#3, r
   call wlocate(l, c)
   call fprint (record$ , def2s)
   l=l+1
 next r
 call wlocate (linesonpage+1, 48)
 whatpage$="Page"+str$(page)+" of"+str$(numofpages)
 call fprint (whatpage$, def2s)
 do
  z2$=inkey$
 loop while z2$=""
 select case asc(right$(z2$, 1))
  case 81          'PgDn
   page=page+1
  case 73          'PgUp
   page=page-1
   if page  1 then
 page = 1
   end if
  case else
   if asc(z2$)  27 then
 beep
   end if
 end select
 CALL clearwindow
loop until (page  numofpages) or (asc(z2$)=27)
call removewindow
for page= 1 to numofpages
 startrec(page)=0
 endrec(page)=0
next page
numlines = 0

END SUB
```

Appendix E
User Library File Listings

DENTSUBS.BAS

REM All the subroutines for DENTAL and DIFF, except for the window and
definition routines, are contained in this module.

REM This module was last modified on 1/30/89 by Cindy Burgess-Russotti

DEFINT A-Z

REM Dimension arrays for DENTAL and DIFF programs.

```
DIM Z(35)
DIM DX$(35)
DIM response(92)
dim option$(10,2), opline(10)
dim dgpos(35,2),treatnum(35,2),numdg(2),treatidx(35)
dim tdline(35), corpresp(36)
```

REM Dimension arrays for definition routines.

```
DIM item$(120),dindx(120,2),disease$(33),disindx(33,2)
```

REM include common statements for all modules

```
rem $include: 'dentcomm.bas'
```

Subroutine PRIQUES
called from: main program (DENTAL) and DIFF.
This routine prints a question on the screen.

```
sub priques(q$) static
```

REM print question

```
charlimit=70
color quescolor,bground
start:
    if len(q$) charlimit then 'Break up the question if it is longer than
the limit (charlimit).
```

```
    b=charlimit
    while asc(mid$(q$,b,1))  32
      b=b-1
    wend
    temp$=left$(q$,b)
    q$=right$(q$,len(q$)-b)
    locate qrow,qcol
    print temp$;
    qrow=qrow+1
    goto start
      else
    locate qrow,qcol
    print q$;
      end if
    color normal,bground
end sub
```

subroutine PRIOPTIONS
called from: DENTAL and DIFF
This routine displays the responses to each question and it displays the
pointer in front of the first response.

```
sub prioptions static

  oprow=qrow+3:opcol=int((80-longest)/2)+5  ' add 2 for ptr,2 for ast 1 blnk

  ptrcol=opcol-5

  for x=1 to numops
    if x=1 then
   color ptrcolor,bground
   locate oprow,ptrcol:print ptr$
   color normal,bground
     end if
     locate oprow,opcol
     opline(x)=oprow
     print option$(x,1);
     oprow=oprow+2
     if option$(x,2)"" then
   locate oprow-1,opcol
   print option$(x,2);
   oprow=oprow+1
     end if
```

```
          next x
     end sub


     Subroutine GETRESP
     Called from: DENTAL and DIFF
     calls: PRINTOP
     This routine waits for a response from the user.  To respond, the user
     can press a number that corresponds to a response or he can use the
     direction keys to move the pointer to the desired response then press
     return to select that response.  This routine also allows the user to
     press F7 for the main menu and F10 for a submenu.


sub getresp static
    astcol=opcol-2
    count=1
    ans=0
    while ans=0

       DO UNTIL z$=""           ' clear keyboard buffer
      z$=inkey$
       LOOP

       DO                    'now get response
      z$=inkey$
       LOOP WHILE z$=""

       if val(z$) = 1 and val(z$) numops then    ' entered valid number

         REM print blanks where old ptr is

      locate opline(count),ptrcol:print blanks2$;
      count=val(z$)
      color ptrcolor,bground
      locate opline(count),ptrcol:print ptr$;
      color resplettr,respbar
      call printop(count)
      color normal,bground
      pause!=TIMER+1
      do while TIMER  pause!
      loop
      ans=val(z$)
        elseif z$=chr$(13) then
      color resplettr,respbar
      call printop(count)
```

```
    color normal,bground
    ans=count
      elseif len(z$)=2 then
    z$=right$(z$,1)
    if z$=chr$(72) then '*** up

        REM print blanks where old ptr is

        locate opline(count),ptrcol:print blanks2$;
        count=count-1:if count  then count=1
        color ptrcolor,bground
        locate opline(count),ptrcol:print ptr$;
        color normal,bground
      elseif z$=chr$(80) then '*** down

        REM print blanks where old ptr is

        locate opline(count),ptrcol:print blanks2$;
        count=count+1:if count  numops then count=numops
        color ptrcolor,bground
        locate opline(count),ptrcol:print ptr$;
        color normal,bground
      elseif z$=chr$(65) then             '*** F7 definitions
        call definitionroutine2
    elseif z$=chr$(67) and mmenu  0 and wherefrom$="dental" then  '*** F9
main menu
        ans=67
      elseif z$=chr$(67) and wherefrom$="diff" then  '*** F9 main menu
        ans=67
      elseif z$=chr$(68) and mmenu 0 and wherefrom$="dental" then  '*** F10
sub menu
        if mmenu=1 then
          ans=681
        elseif mmenu=2 then
          ans=682
        end if
      elseif z$=chr$(68) and softmenu 0 and wherefrom$="diff" then  '*** F10
sub menu
        ans=68
      end if
      end if
    wend
end sub
```

Subroutine PRINTOP
called from: GETRESP
This routine is called after the user selects a response. The response
is displayed in inverse colors. The colors are set in getresp.

```
sub printop(count) static

  locate opline(count),opcol
  print option$(count,1);" ";
  if option$(count,2)"" then
    locate opline(count)+1,opcol
    print option$(count,2);
    if len(option$(count,1))  len(option$(count,2)) then
  print space$(len(option$(count,1))-len(option$(count,2))+1);
    else
  print " ";
    end if
  end if
end sub
```

Subroutine INITOPTIONS
called from: DENTAL and DIFF.
This routine resets the elements of the option array to null strings.

```
sub initoptions static
  erase option$
end sub
```

Subroutine BOX
called from: DENTAL and DIFF
This routine draws a box around the screen.

```
SUB BOX (begrow,begcol,endrow,endcol) STATIC
  URCNR$=CHR$(187)
  ULCNR$=CHR$(201)
  SIDE$=CHR$(186)
  LRCNR$=CHR$(188)
  LLCNR$=CHR$(200)
  TOP=205:BOT=205

  LOCATE BEGROW,BEGCOL:PRINT ULCNR$;
STRING$(endcol-begcol-1,TOP);URCNR$;
  X = endrow-begrow-1
  WHILE X  0
```

```
    LOCATE BEGROW+X,BEGCOL:PRINT SIDE$;:LOCATE BEGROW+X, end COL:
PRINT SIDE$;
    X = X - 1
    WEND
    LOCATE endrow,BEGCOL:PRINT LLCNR$;STRING$(endcol-begcol-1,BOT);LRCNR$;
END SUB
```

subroutine WRTDAT
called from: DENTAL and DIFF
This routine writes the responses to all the questions in DENTAL and DIFF
to a file (DENTAL.DAT). If the file does not exist, it is created.

```
' subroutine to write data to file
' file name is dental.dat


' needs ssn,age and z array from main

SUB wrtdat static

open "dental.dat" for random as #2 len=374

field #2, 9 as ss$, 2 as ag$, 10 as dt$, 5 as tm$, 92 as r$,_
    2 as npb$, 2 as nps$, 70 as pb$, 70 as ps$, 72 as cpdx$,_
    40 as othr$

'find out last rec num in file
fsize=lof(2)
recnum=fsize/374
recnum=recnum+1

'init
nprob=0:nposs=0
prob$="": poss$=""
corpdx$=""

'create prob$ and poss$ from z array
for x=1 to 35
  if z(x)=1 then
    nprob=nprob+1
    prob$=prob$+right$(str$(x),2)
  elseif z(x)=2 then
    nposs=nposs+1
    poss$=poss$+right$(str$(x),2)
  end if
```

```
next x

for x=1 to 36
  if corpresp(x)=1 then
    corpdx$=corpdx$+right$(str$(x),2)
  end if
next x

'make response array into a string
for x=1 to 92         '92 responses dental+diff
  response$=response$+right$(str$(response(x)),1)
next x

'load buffer and print
lset ss$=ssn$
lset ag$=age$
lset dt$=date$
lset tm$=left$(time$,5)
lset r$=response$
lset npb$=mki$(nprob)
lset nps$=mki$(nposs)
lset pb$=prob$
lset ps$=poss$
lset cpdx$=corpdx$
lset othr$=other$

put #2, recnum
close #2
END SUB
```

Subroutine GETSSN
called from: DENTAL
In this routine the user is asked to enter the patient's social security
number and age.

```
SUB getssn static

ssn$=""
age$=""
color ssnbox,bground
lc=21:llen=38:rc=llen+lc-1
row=10:locate row,lc:print string$(llen,176)
for row = 11 to 15
locate row,lc:print chr$(176);:print string$(llen,30);:locate row,rc:print
```

```
chr$(176);
next row
row=16:locate row,lc:print string$(llen,176);
color quescolor,bground
locate 12,24:print"Enter patient's SSN: ___-__-____"
color normal,bground
ssncol=45

DO
  locate 12,ssncol,1,5,6
  DO
    s$=inkey$
  LOOP while s$=""
  if asc(s$)=8 then
    ssncol=ssncol-1
    if ssncol- then
   ssncol=45
    elseif len(ssn$)=3 or len(ssn$)=5 then
   ssncol=ssncol-1
    end if
    locate 12,ssncol
    color quescolor,bground
    print "_";
    color normal,bground
    if len(ssn$)0 then
   ssn$=right$(ssn$,len(ssn$)-1)
    end if
  elseif asc(s$)47 and asc(s$); and len(ssn$)  then
    print s$;
    ssn$=ssn$+s$
    if len(ssn$)=9 then
   locate ,,,6,7
    end if
    ssncol=ssncol+1
    if len(ssn$)=3 or len(ssn$)=5 then
   ssncol=ssncol+1
    end if
  elseif asc(s$)=13 then
    if len(ssn$)        then
   beep
    end if
  else
    beep
  end if
```

```
LOOP until len(ssn$)=9 and asc(s$)=13
'get patient age
color quescolor,bground
locate 14,24:print"Enter patient's AGE: __"
color normal,bground
agecol=45
s$=""
DO
  locate 14,agecol,1,5,6
  DO
    s$=inkey$
  LOOP while s$=""
  if asc(s$)=8 then
    agecol=agecol-1
    if agecol- then
  agecol=45
    end if
    locate 14,agecol
    color quescolor,bground
    print "_";
    color normal,bground
    if len(age$)0 then
  age$=right$(age$,len(age$)-1)
    end if
  elseif asc(s$)47 and asc(s$); and len(age$) then
    print s$;
    age$=age$+s$
    if len(age$)=2 then
  locate ,,,6,7
    end if
    agecol=agecol+1
  elseif asc(s$)=13 then
    if len(age$) then
  beep
    end if
  else
    beep
  end if
LOOP until len(age$)=2 and asc(s$)=13
'turn cursor off
locate ,,0
color normal,bground

END SUB
```

Appendix F

Program Flowchart

FLOWCHART

The following flowchart depicts the decision-making process of the original program procuced by the Naval Dental Research Institute, Great Lakes, IL. It does not include any changes made to the user interface by the Naval Submarine Medical Research Laboratory, Groton, CT. The numbers in the diagram which follow do not refer to the present program.

```
   ┌──────┐
   │ 1450 │
   └──────┘
      │
┌───────────┐
│  GOSUB    │   SET VARIABLES TO 0
│  32400    │
└───────────┘
      │
   ┌──────────┐⁹
   │   X      │        DENTAL EMERGENCIES MENU, NOT-TRAUMA RELATED
   └──────────┘
      │
    ◇ X = 1 ◇──Y──( 5300 )   TOOTH SPECIFIC
      │ N
    ◇ X = 2 ◇──Y──( 3210 )   TEETH, GENERALIZED OR MULTIPLE
      │ N
    ◇ X = 3 ◇──Y──( 5250 )   GINGIVA, SPECIFIC AREA
      │ N
    ◇ X = 4 ◇──Y──( 5250 )   GINGIVA, GENERALIZED
      │ N
    ◇ X = 5 ◇──Y──( 5300 )   ORAL MUCOSA, TOOTH-ASSOCIATED
      │ N
    ◇ X = 6 ◇──Y──( 1790 )   OTHER ORAL SOFT TISSUES
      │ N
    ◇ X = 7 ◇──Y──( 7140 )   TEMPROMANDIBULAR JOINT/MUSCLES
      │ N
    ◇ X = 8 ◇──Y──( 1920 )   DENTAL EXTRACTION SITE
      │ N
    ◇ X = 9 ◇──Y──( 5250 )   TISSUE SWELLING
      │ N
```

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```
                    ┌──────┐
                    │ 1790 │
                    └──────┘
                       │
          ┌─────────────────────┐
          │        PRINT         │
          │  "WRONG PROGRAM.     │   REFER TO DIFF
          │   SELECT "3"         │
          │  FROM MAIN MENU."    │
          └─────────────────────┘
                       │
                    ┌──────┐
                    │ 840  │
                    └──────┘


                    ┌──────┐
                    │ 1880 │
                    └──────┘
                       │
                ╭─────────────╮
                │ CHAIN DIFF1 │
                ╰─────────────╯


                    ┌──────┐
                    │ 1920 │
                    └──────┘
                       │
                 ╔═══════════╗
                 ║  GOSUB    ║
                 ║  2540     ║
                 ╚═══════════╝
                       │
       1930      ┌──────────┐4
                 │   D1     │
                 └──────────┘
                       │
       2060      ┌──────────┐4
                 │   D2     │
                 └──────────┘
                       │
       2260      ┌──────────┐2
                 │   D3     │
                 └──────────┘
                       │
                  ┌────────┐
                  │  2340  │
                  └───╲───╱─┘
```

```
        ( 2740 )─────────────┐
             │            ┌───────────┐
             │            │   SUB     │
        ┌────┴────┐       │   2740    │
        │ PN    3 │       └───────────┘
        └────┬────┘

         ╱─────────╲
        ╱ G = 1 OR P1 ≠ 0 ╲
       ╱   OR   X = 3   OR  ╲        ┌───────────┐
      ╱  X = 4    OR   X = 7 ╲───Y───│  RETURN   │
       ╲   OR   X = 8    OR  ╱       └───────────┘
        ╲     X = 9        ╱
         ╲───────────────╱
             │  N
             │
        ┌────┴────┐
   2832 │ CI    2 │
        └────┬────┘
             │
        ┌────┴────┐
        │ RETURN  │
        └─────────┘


        ( 2850 )─────────────┐
             │            ┌───────────┐
             │            │   SUB     │
        ┌────┴────┐       │   2850    │
   2850 │ PB    2 │       └───────────┘
        └────┬────┘
        ┌────┴────┐
   2960 │ PC    2 │
        └────┬────┘
        ┌────┴────┐
   3050 │ PE    3 │
        └────┬────┘
        ┌────┴────┐
   3160 │ RETURN  │
        └─────────┘
```

```
              ( 5230 )
                 │
                 ▼
         ╔═══════════╗
         ║  GOSUB    ║        SET Z(0)
         ║  11810    ║
         ╚═══════════╝
                 │
                 ▼
  5240    (11870)         PRINT DG



              ( 5250 )
                 │
                 ▼
              ╱     ╲           Y
            ╱  X = 9  ╲──────────────( 6010 )
              ╲     ╱
                 │ N
                 ▼
         ╔═══════════╗
         ║  GOSUB    ║
         ║  2430     ║
         ╚═══════════╝
                 │
                 ▼
              ╱     ╲           Y
            ╱  X = 4  ╲──────────────( 5510 )
              ╲     ╱
                 │ N
  ( 5300 )───────┤
                 ▼
         ┌───────────┐ 2
         │  P1       │
         └───────────┘
                 │
                 ▼
              ╱         ╲
            ╱  (P1 = 2)   ╲        Y
  5400    ◄ AND ((X = 5) OR ►────────( 3210 )
            ╲  (X = 1))   ╱
              ╲         ╱
                 │ N
                 ▼
              ╱     ╲           Y
  5410     ◄ P1 = 2  ►──────────────( 5510 )
              ╲     ╱
                 │ N
                 ▼
            ┌─────────┐
            │  5420   │
            └────┬────┘
                 ▽
```

F-10

```
        ( 5420 )
           │
      ┌──────────┐
      │  UZ    2 │
      └──────────┘
           │
          ╱ ╲
        ╱(X = 1)╲       Y    ┌──────────┐
       ╱   OR    ╲──────────▶│  GOSUB   │
       ╲(X = 5)  ╱           │  2430    │──┐
        ╲       ╱            └──────────┘  │
          ╲ ╱                              │
           │ N                   ◀─────────┘
 ( 5510 )──┼─────────────────────▶
           │
      ┌──────────┐
      │  P2    4 │
      └──────────┘
           │
      ┌──────────┐
      │  P3    2 │
      └──────────┘
           │
          ╱ ╲
        ╱     ╲      Y
       ╱ UZ = 1╲──────────▶ ( 6990 )
       ╲       ╱
        ╲     ╱
          ╲ ╱
           │ N
      ┌──────────┐
      │  P4    3 │
      └──────────┘
           │
      ┌──────────┐
      │  P5    2 │
      └──────────┘
           │
       ( 6130 )



       ( 6010 )
           │
      ┌──────────┐
      │  SW    3 │
      └──────────┘
           │
       ⬡ 6110 ⬡
```

F-11

F-13

```
                    ( 6810 )
                       |
                  +---------+
                  |  PH   2 |
                  +---------+
   ( 6910 )          |
   ( 6920 )-----------+
                     / \
                    /   \
                   /((SW = 2) OR (P7 = 1))\        +----------+
                  <      AND              >---Y----|  GOSUB   |
                   \   (P8 = 1)          /         |   2850   |
                    \   /                          +----------+
                     \ /                                |
                      | N                               |
                      +<-------------------------------+
                      |
   6950         +-----------+
                |  ZZ = 1   |
                +-----------+
                      |
   6960         +-----------+
                |  PF = 1   |
                +-----------+
                      |
                     / \
   6970            /     \             +----------+
                  < SW = 2 >----Y------|  P7 = 1  |
                   \     /             +----------+
                    \   /                    |
                     \ /                      |
                      | N                      |
                      +<----------------------+
                      |
                     / \
                   /     \
                  / (P7 = 1) \
   6975          /   AND      \
               < (P8 = 1) AND ((PB = 1)>---Y---( 3170 )
                \ OR (PC = 1) OR /
                 \  (PE = 1))   /
                  \     /
                   \   /
                    \ /
                     | N
                    / \
                  /     \
   ( 6990 )----->/(P7 = 1)\
               <   AND     >-----Y-----( 1790 )
                \ (P8 = 1) /
                 \       /
                  \     /
                   \   /
                    \ /
                     | N
              +-------------+
              | DG Z (3),   |
              | Z(14)-Z(18) |
              +-------------+
                     |
                  / 7110 \
                  \------/
```

F-14

```
                    ( 7110 )
                       │
                   ╱───────╲
                  ╱ (P7 = 1) ╲      Y
                 ╱    AND      ╲────────( 3210 )
                 ╲  (P8 = 1)   ╱
                  ╲           ╱
                   ╲─────────╱
                       │ N
              ┌──────────────┐
       7120   ║    GOSUB     ║
              ║    11810     ║
              └──────────────┘
                       │
                   (11870)


                    ( 7140 )
                       │
              ┌──────────────┐
              │    X1      2 │
              └──────────────┘
                       │
              ┌──────────────┐
       7240   │    X2      2 │
              └──────────────┘
                       │
              ┌──────────────┐
       7340   │    X3      2 │
              └──────────────┘
                       │
              ┌──────────────┐
              │    X4      2 │
              └──────────────┘
                       │
              ┌──────────────┐
       7520   │    X5      2 │
              └──────────────┘
                       │
                   ╲ 7610 ╱
                    ╲────╱
```

```
                                    ┌──────┐
                                    │ 8470 │
                                    └───┬──┘
                                        │
                               ┌────────┴──┐ 3
                               │    TA     │      DENTAL EMERGENCIES
                               └────────┬──┘      TRAUMA
                                        │
                               ┌────────┴──┐ 3
              8610             │    TB     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 2
              8740             │     C     │
                               └────────┬──┘
                                        │
                                    ╱───┴───╲          Y    ┌──────┐
                                  ╱   TA = 1  ╲──────────────│ 9840 │
                                    ╲───┬───╱                └──────┘
                                        │ N
                               ┌────────┴──┐ 4
              8830             │    PZ     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 8
              8960             │    ZY     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 2
              9170             │    TC     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 2
              9250             │    TG     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 3
              9340             │    TI     │
                               └────────┬──┘
                                        │
                               ┌────────┴──┐ 2
              9450             │    TJ     │
                               └────────┬──┘
                                        │
                                   ┌────┴────┐
                                   │  9590   │
                                   └──╲────╱──┘
```

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